

Syllable Contraction in Cantonese A-not-A Constructions:

An Optimality Account

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Abstract of thesis entitled:

Syllable Contraction in Cantonese A-not-A Constructions:
An Optimality Account

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This thesis describes and explains the behavior of the various strings of A-not-A constructions in Cantonese connected speech, namely $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$, $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ and $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$, in which the morpheme / \mathfrak{m}^{21} / is sequenced between two identical verbs or adjectives. In $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ and $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ strings, the syllabic nasal is either realized as the coda of σ_1 or the onset of σ_2 , which is subject to phonological context. These patterns are explained through constraint interaction of a set of universal and violable constraints in Optimality Theory (Prince & Smolensky 1993). I demonstrate that the universality of OT constraints can relate language-specific processes with universal tendencies of connected speech. Cross-linguistic differences in connected speech phonology can be explained via different constraint rankings. The OT framework allows a unified discussion of language universality and language specificity in regard to connected speech processes.

The prohibition of syllable contraction in the $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ string as well as the simple negation string $\mathfrak{m}^{21}\text{-}\sigma_1$ is attributed to prosodic constituency, which provides evidence that syllable contraction does not only concern the two contracted syllables, but is also governed by prosodic factors of a larger domain, namely the phrase level. I argue that various A-not-A strings are governed by the same ranking of constraints, in which faithfulness to the prosodic head is put to the highest priority.

I argue that the flexibility of constraint re-ranking mechanisms contributes to the explanation of the high degree of variation among connected speech forms. Variant forms of syllable contraction demonstrate varying closeness to the citation form, depending on the demand of speech clarity, which is represented by faithfulness constraints. The constraint re-ranking mechanism allows a unified discussion of variant forms and their relationship with conflicting demands. The flexible nature of the OT framework sheds light on the study of connected speech.

論文摘要

論文題目：粵語「A 唔 A」短語中音節縮減現象的優選論分析

本研究旨在探討粵語口語中疑問短語「A 唔 A」的音系學現象。語素「唔」/m²¹/ 本身是一個唇鼻音，自成一個獨立音節。在疑問短語中，它通常夾於兩個相同的形容詞或動詞中間。在口語裏， σ_1 -m²¹- σ_2 和 σ_1 -m²¹- σ_2 - σ_3 短語中，/m²¹/ 喪失獨立音節的地位，時而變成前一音節的韻尾，時而變成後一音節的聲母，同時亦影響鄰近音節邊緣——這些現象都是有規律的。本文以優選論為理論框架，指出音節縮減現象乃受一套制約條件所限制。這些制約條件具普遍性，即所有人類自然語言都受其限制；然而，制約條件的排列次序則解釋不同語言之間的差異。故此，若所有人類語言的口語中都有音節縮減的趨勢，優選論便是一個十分合適的框架來分析口語音系學現象。它的優勝之處在於它可以把個別語言的獨特性和全球語言的普遍性作綜合討論。

本研究亦發現 σ_1 - σ_2 -m²¹- σ_3 - σ_4 類型的疑問短語和否定短語 m²¹- σ_1 雖然都涉及語素「唔」/m²¹/，卻不允許任何的音節縮減，這涉及韻律因素。當 /m²¹/ 在一個音步的重拍時，不可有任何音節縮減。本文指出，所有短語類別，包括 σ_1 -m²¹- σ_2 ， σ_1 -m²¹- σ_2 - σ_3 ， σ_1 - σ_2 -m²¹- σ_3 - σ_4 和 m²¹- σ_1 其實均受同一個排列的制約條件所規管——最佳輸出必須對重拍音節忠實。音節縮減現象不單單涉及兩個縮減音節，更涉及整個短語的韻律。

就口語現象而言，優選論比其他理論框架更富彈性，更能切合口語的特性——不同的場合要求的說話清晰度不一，因此當一個人在不同的情況下說同一句話，每一次他所發出的語音都會有差異，音節縮減的程度亦不一樣。同樣地，不同的人說同一句話，音節縮減的程度亦有差異。優選論中的忠實性制約條件正代表人說話時對清晰度的需求，故忠實性制約條件相對於其他制約條件的排序便能反映其對清晰度的要求。標記性和忠實性制約條件的排序和兩種發音原則之間的互動可解釋說話者發音時想省力之餘，亦須確定說話的清晰度能足夠讓聆聽者聽得明白。制約條件重新排列，便能同時把不同程度的音節縮減作統一的討論。因此，與其他理論框架相比，優選論更適合解釋口語音系學現象。

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CHAPTER 1 INTRODUCTION

1.1 Overview

This thesis presents an optimality-theoretic account of the phonological behavior of the labial syllabic nasal /m²¹/ during syllable contraction in Hong Kong Cantonese connected speech. In a typical A-not-A interrogative construction, the morpheme 唔/m²¹/ ‘not’ is sequenced between two identical verbs or adjectives, as demonstrated in (1) and (2) respectively. For the purpose of indication, the syllable preceding /m²¹/ is indicated as σ_1 , whereas the one following /m²¹/ is σ_2 . In the string σ_1 -m²¹- σ_2 , σ_1 and σ_2 are representations of the same morpheme, and hence phonemically they are identical. (1) and (2) are transcriptions of syllables in citation form. Notice that in both examples σ_1 and σ_2 are identical syllables.

- (1) 你 係 唔 係 香港 人
lej¹³ hej²² m²¹ hej²² hœŋ⁵⁵koŋ³⁵ jœn²¹
you be NEG be Hong Kong person
‘Are you a Hong Konger (or not)?’
- (2) 我 靚 唔 靚
ŋœ:¹³ lej³³ m²¹ lej³³
I beautiful NEG beautiful
‘Am I beautiful?’

In connected speech, the three syllables in the string σ_1 -m²¹- σ_2 are often phonetically realized as variant forms which deviate from the citation form. (3)

and (4) are phonetic realizations of (1) and (2):

- (3) 你 係 唔係 香港 人
 lej¹³ hɛj²² mɛj²² hœŋ⁵⁵ koŋ³⁵ jɛn²¹
 you be NEG-be Hong Kong person
 ‘Are you a Hong Konger (or not)?’
- (4) 我 靚唔 靚
 ŋɔ:¹³ lɛm³¹ lɛŋ¹³
 I beautiful-NEG beautiful
 ‘Am I beautiful?’

An overview of these variant forms is given by the following observations:

- (5) A trisyllabic string $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ is often contracted into two syllables. Contraction either occurs between the first and second syllable, or between the second and the third. Throughout the subsequent discussion, the former is indicated as ‘ $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction’ whereas the latter is indicated as ‘ $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction’.
- (6) After contraction, the syllabic bilabial nasal / \mathfrak{m}^{21} / loses its status as an independent syllable, and hence its syllabicity. It is either realized as the onset of σ_2 or the coda of σ_1 , as shown in (3) and (4) respectively.
- (7) / \mathfrak{m}^{21} / causes changes, often reduction, to the syllable to which it attaches.

In regard to these observations, the objective of this thesis is to answer the following questions:

- i. If the choice between $\sigma_1\text{-}\mathfrak{m}^{21}$ and $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction is not random, what are the patterns?
- ii. Why does a syllabic nasal lose its syllabicity in connected speech? What is the force which triggers its contraction with other syllables?
- iii. Does contraction take place under other circumstances such as the $\sigma_1.\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3.\sigma_4$ string and the simple negation $\mathfrak{m}^{21}\text{-}\sigma_1$? If it is not the case, how can patterns of contraction be predicted?
- iv. Is there any available theoretical framework whose flexibility is able to cater the high degree of inter/intra-speaker variation in connected speech?

Chapter 2 evaluates why previous literature is not adequate to provide the answers to the above questions and explains how the rationale of this study is formulated. Chapter 3 is going to answer the first question by generalizing patterns of syllable contraction wherever /m²¹/ is involved. Chapter 4 focuses on the segmental and tonal levels and provides an optimality-theoretic (Prince & Smolensky 1993) account for the patterns summarized in Chapter 3. Chapter 5 provides a prosodic analysis to address the third question by ranking a set of universal and violable constraints in accordance to OT. Chapter 6 argues that the optimality-theoretic framework is able to address the last question via the mechanism of constraint re-ranking. Chapter 7 summarizes the entire discussion.

1.2 Data collection

A list of 552 σ_1 -m²¹- σ_2 phrases, 260 σ_1 -m²¹- σ_2 - σ_3 phrases, 260 σ_1 - σ_2 -m²¹- σ_3 - σ_4 phrases, and 69 m²¹- σ_1 phrases is compiled. The data are mainly collected from my lexicon and daily observations. Both the citation form and the form in connected speech are transcribed with IPA symbols. The phrases are organized according to the natural class of the onset and the coda of the syllable as presented in the appendices. Each item is verified by at least one native Hong Kong Cantonese speaker to ensure that the collected utterances are commonly produced by native speakers in general and are not a feature of any idiolect.

The following figures summarize the phonetic inventory of Hong Kong

Cantonese:

(8) Inventory of Cantonese consonants (Matthews & Yip 1994:400)

	Bilabial	Labiodental	Alveolar	Palatal	Velar	Glottal
Plosive	p p^h		t t^h		k k^h k^w k^{wh}	
Nasal	m		n		ŋ	
Affricate			ts ts^h			
Fricative		f	s			h
Lateral Appr.			l			
Approximant				j	w	

(9) Cantonese vowels (Matthews & Yip 1994:401)

i:	y:		u:
e		ə	o
ɛ	œ:	ɐ	ɔ:
		a	

(10) Cantonese tone system (Matthews & Yip 1994:401)

Tone no.	Tone letter	Tone category
1	55 ¹	High level
2	35/25 ²	High rising
3	33	Mid level
4	21/11 ³	Low falling
5	23/13 ⁴	Low rising
6	22	Low level

Note: Tone letters for checked syllables (syllables with obstruent codas) of high level, mid level and low level tones are respectively 5, 3 and 2.

¹ The high falling allotone 53 is mentioned in Yip & Matthews (1994) but it is not included in the table since it is fading out in Hong Kong Cantonese.

² I transcribe high rising tone as 35 consistently in the subsequent discussion.

³ I transcribe low falling tone as 21 consistently in the subsequent discussion.

⁴ I transcribe low rising tone as 13 consistently in the subsequent discussion.

1.3 Defining connected speech

An utterance is composed of a sequence of separated words. However, when we speak, we produce a connected stream of sounds continuously in a flow. We do not stop and pause between every word. To put it in a more vivid picture, we do not produce the spaces between the words as we speak. Kaisse (1985:1) describes that there is an ‘irresistible tendency’ for words to blur together in connected speech. Shariatmada (2006) also observes that not every utterance is maximally clear and carefully articulated. The resulted speech is thus a variant of the form produced in isolation.

Connected speech is not necessarily fast speech. Production of sounds in a string with normal speech tempo is also considered a form of connected speech. An example to illustrate this point is resyllabification. In Spanish connected speech, the string *los otros estaban en al avion* is always resyllabified as *lo.so.tro.ses.ta.ba.ne.na.la.vion* even in a normal speech (Kenstowicz 1994:280). Hence, connected speech is not defined as equivalent to fast speech, even though fast speech can be a form of connected speech.

1.4 Theoretical framework: Optimality Theory (OT)

Optimality Theory (Prince & Smolensky 1993) is a constraint-based grammar which assumes that Universal Grammar (UG) performs two functions *Gen* and *Eval*. *Gen*, the Generator, generates output candidates for a given input. It is free to generate any logically possible candidates. *Eval*, the Evaluator, is responsible for evaluating members of a candidate set and choosing an optimal output. The choice is governed by a set of universal constraints. These constraints are inherently conflicting and no output satisfies all constraints. An output is optimal when it incurs the least serious constraint violations according to the constraint hierarchy.

1.4.1 Basic principles

Violability and domination are crucial principles in OT. Violability states that all constraints are violable but the violation must be minimal. It brings in the notion that optimality is relative to other candidates with reference to a constraint ranking, and it is by no means a polarized distinction between correctness and incorrectness.

Domination is another core concept in the theory. All constraints in UG are in a dominance relation. A higher-ranked constraint takes precedence over the lower-ranked one. The ranking of a constraint hierarchy determines which

candidate is to be selected as the output. A different ranking is going to select a different output. The notion that constraint ranking is not universal can account for language-particular behavior on the ground of universal constraints.

1.4.2 Conflicts between markedness and faithfulness

OT states that in every grammar, two forces are engaged in inherent conflict. The first force is markedness. It acts to exert pressure toward unmarked types of structure. By Kager's (1999:2) definition, unmarked values are 'cross-linguistically preferred and basic in all grammars'. It is rooted in articulatory and perceptual systems.

Markedness is counterbalanced by faithfulness. Faithfulness strives to preserve lexical contrasts. It requires linguistic forms to be realized as close as possible to their lexical basic forms. Output forms are considered maximally faithful to the input if they are completely congruent with their lexical inputs. This force is inevitably in conflict with markedness. If we are to enlarge the array of means of encoding lexical contrasts, it is inevitable to have a more complex (and hence more marked) sound system. (Kager 1999:6)

1.4.3 Rationale of using OT in the study of connected speech phonology

The explanatory power and flexibility of the OT framework fits the nature of connected speech. First, articulatory markedness and faithfulness constraints best

represent the two conflicting forces in connected speech, which are respectively the need to avoid articulatorily complex structures and the need to preserve phonological contrast. Among many definitions of markedness, one important aspect of markedness is rooted in articulatory complexity and perceptual difficulties. Marked values are cross-linguistically avoided and they are used by grammars for the purpose of creating contrast. In connected speech, the force of avoiding articulatorily complex structures leads to the avoidance of marked values in a language, such as deletion of a complex structure and assimilation to a less complex structure. The group of markedness constraints is able to represent this principle in the theoretical framework. On the other hand, the group of faithfulness constraints represents the need to preserve phonological contrasts. This force strives to keep the output congruent with their lexical inputs. It requires linguistic forms to be close to their lexical underlying forms. The product in connected speech is thus a compromise between the two forces. In OT tableaux, the conflict and compromise can be represented formally through constraint ranking.

In OT, a principle of a relatively low rank is not erased from formal representation. Although a markedness or faithfulness constraint may be dominated and it fails to leave impact on the output, it is not erased from the

constraint hierarchy. Although it is violated, it does not mean that it has no role to play in the language. By contrast, in a rule-based approach, only processes that affect the output are represented. For example, a rule of deletion may show the change, the resulting surface form and the circumstances under which it happens; yet, it does not leave any clue that the principle of preserving phonological contrast is sacrificed. In this way, the OT framework is a better choice to represent the solution of conflict in connected speech.

The OT framework is able to explain variant forms of a language on a common ground. The product of connected speech is a variant form of a language. It shows a high degree of variation which has to be dealt with by a flexible theoretical framework. There is not only inter-speaker variation, but also intra-speaker variation. It thus loses the trace easily that these very different forms are actually driven by the same conflicting forces, and that they are forms of the same language. However, in OT, constraint re-ranking may explain these variations on the same basis. Variant forms can be analyzed by similar constraint hierarchies (as in Shepherd 2003 for the case of Spanish obstruent coda), and the key to explain their difference lies in the ranking of certain constraints.

The OT framework can also represent the universality of cross-linguistic connected speech phenomena, contributing to typological discussion. Although

different languages adopt different mechanisms to resolve conflicts, their speakers are driven by the same principles of connected speech. I will quote the example in 3.1.1.1.2 that both Japanese and Cantonese have mechanisms to avoid a syllabic nasal. Japanese chooses to nasalize the preceding vowel, but Cantonese chooses to resyllabify the syllabic nasal into a coda consonant. In a rule-based approach, these two processes are to be represented by two totally different rules – vowel nasalization and nasal resyllabification. It is hard to draw relevance between these two rules since the processes they involve are so different. In OT, they can be discussed with the same markedness constraint – ‘No syllabic nasals.’ In this way, connected speech of different languages can be compared on the same basis. The soft sense of universality in markedness constraints contributes to the discussion of universal properties of human speech sounds as well as universal tendencies of speakers in connected speech.

1.5 Principles of speech production

Constraint competition in OT grammar is analogous to the competing forces at work during speech production. The following principles are introduced by Boersma (1998):

- (11) Boersma’s principles (1998:2)
- a. A listener-oriented principle: minimization of perceptual confusion
 - b. A speaker-oriented principle: minimization of articulatory effort

From a listener’s perspective, a sound should be perceptually distinctive so that it

is distinguishable from other sounds. From a speaker's perspective, the articulatory effort put into the process of production of a sound should be minimal. The produced speech must strike a balance between the two principles so that the least effort is paid to draw a clear perceptual contrast for effective communication.

Shariatmadari (2006) states that phonological reduction occurs as long as it allows effective communication. The vocal tract is a motor system of the human body. It is always advantageous for an organism to conserve energy, giving rise to a tendency to economize. Most of the speech articulators are capable of generating higher forces but they usually do not do so. To put it in Shariatmadari's words, 'a lot of energy is not expended unless the situation really demands it' (Shariatmadari 2006:208). In the subsequent discussion of Cantonese syllable contraction, I will elaborate on how the conflict among various forces are compromised, and how it can be formally represented in the OT framework.

CHAPTER 2 APPROACHES TO SYLLABLE CONTRACTION

This chapter is going to review different approaches to address the issue of syllable contraction. Each approach has contributed to the current study in certain ways. On the other hand, each of them has left unanswered questions which constitute the gap in the literature. For each approach, I am to evaluate its relevance to my research questions and explain the rationale of my current approach. At the end of this chapter, I put forward my hypotheses in regard to Cantonese syllable contraction phenomena.

2.1 Descriptive work on Cantonese syllable contraction

Description of syllable contraction in Cantonese can be traced back to Yuan *et al* (1960) and Hashimoto (1972). The phenomenon is described as ‘shrink-reduce’ (縮減) or the ‘swallowing’ of some elements of a syllable. The concept of contraction is not yet well-established. Both works observe that the occurrence of contracted syllables is so frequent that some of them are lexicalized as new entries in the Cantonese lexicon. Contracted forms of *twenty* 二十 [ji²¹ səp²¹] and *thirty* 三十 [sam⁵⁵ səp²¹] are lexicalized as 廿 [ja²¹] and 卅 [sa⁵²] respectively. Yuan *et al* (1960) states that the vowel of the second syllable seems to be ‘swallowed’ by the first one. The ‘swallowing’ phenomenon is very common when a user of Cantonese actually speaks the language.

The high frequency of syllable contraction during connected speech draws our attention to the phonological aspect of the phenomenon, which formulates the rationale of this thesis. If the job of linguists is to study human language, and if connected speech is the form of language that we actually produce every day, then connected speech phonology is definitely an area that deserves the concern of phonologists.

These early works also point out that the products of syllable contraction exhibit a high degree of variation. For example, the number *ten* in Cantonese 十 /sɛp²¹/ can be reduced to either [ɐ²¹] or [a²¹]. Though variant forms are found, the derivation of the contracted output form is definitely not random because variant forms are always limited to [ɐ²¹] and [a²¹]. It infers that syllable contraction must be rule-governed. However, these rules allow a certain degree of flexibility to derive more than one surface forms. The subsequent discussion of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ contraction in connected speech is going to follow this line of thought. First, what are the rules governing syllable contraction? Second, what are the variant forms of syllable contraction? How can we discuss these variant forms within a flexible framework?

2.2 The experimental approach to syllable contraction

Wong (1996) attempts to address the relationship among competing driving

forces of Cantonese connected speech, namely tempo, processing rate and clarity drive. In the experiment, subjects are assigned with comic strips and they are required to do story-telling tasks within a given time limit. On the other hand, they are also asked to produce a set of nonsense utterances within a given time limit. These two tasks aim at testing the relationship between speech tempo and speech planning processes. Subjects are then required to re-do the same story-telling task. In this trial, subjects are instructed to make articulations as clearly as possible. This test aims to investigate the relationship between clarity drive and speech tempo. Instances of bisyllabic fusion are counted in each test. Statistic results show that there is strong correlation between fast speech tempo and frequency of syllable fusion.

Although Wong (1996) suggests that revision of the experimental design is desirable before one can draw a fair conclusion on the relationship between processing rate and clarity drive, her experiment introduces the idea of competing forces in connected speech. With a fast speech tempo, a speaker is required to produce all syllables of a given utterance within a limited period of time. Avoidance of complex articulatory gestures is favorable to cater the demand of speech tempo. On the other hand, clarity drive comes into conflict with the minimization of articulatory effort. In order to make clear articulation, syllable

reduction should be avoided. The satisfaction of one principle implies the violation of another. The idea of conflicting forces contributes to the rationale of the theoretical framework that I adopt in regard to $\sigma_1\text{-}\eta^2\text{-}\sigma_2$ contraction. If a contracted syllable is a result of the competition between different forces, how can this conflict be represented in a phonological analysis? I will argue that the conflict between markedness and faithfulness constraints in Optimality Theory is able to answer this question.

2.3 *The acoustic approach to syllable contraction*

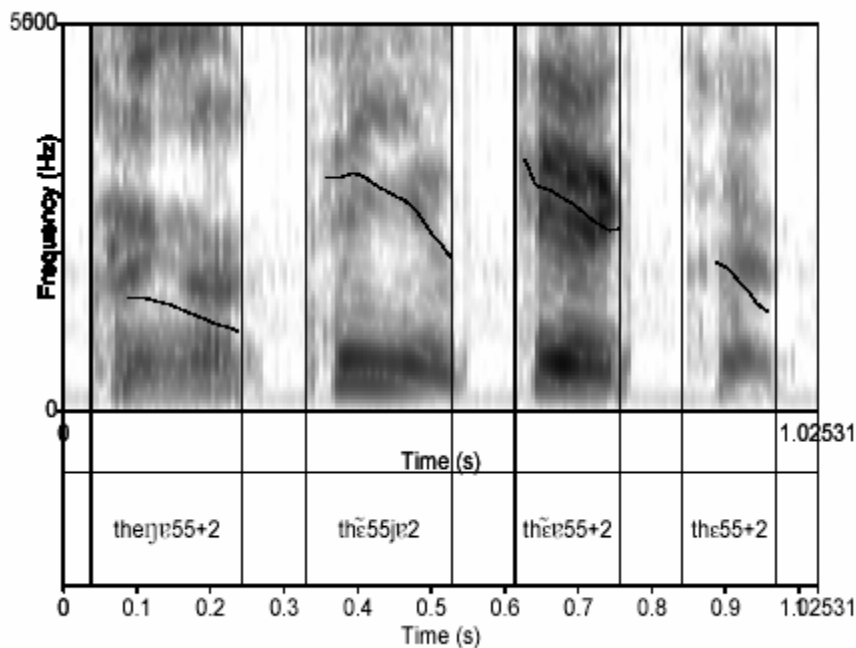
Wong (2004) is an instrumental study on the relationship between speech tempo and syllable fusion. Subjects are instructed to repeat word groups at different speech rates – the normal rate and the fastest possible speech rate. Their utterances are taped with *Praat*¹ and represented by frequency in Hz. Results suggest that a faster speech rate gives rise to a higher degree of fusion. An example is the production of 聽日 [t^hej⁵⁵ jət²] ‘tomorrow’ as shown in (12). Four tokens demonstrate different degrees of fusion. The leftmost token shows that the two syllables [t^hej⁵⁵ jət²] are realized in a contracted form [t^hej⁵⁵⁺²] within 0.2s; whereas the rightmost token shows that the two syllables are further contracted into [t^hε⁵⁵⁺²]² in 0.14s. In a shorter period of time, more segments are deleted,

¹ *Praat* is a software for doing acoustic analysis. It is available for free download at <http://www.praat.org>.

² Wong (2004) represents the tone of the contracted syllable as 55+2. It means a high falling tone.

and hence the produced syllable is getting shorter progressively. Tonal melodies are unchanged in all the four attempts.

(12) Four degrees of fusion for the word 聽日 [t^hej⁵⁵ jət²] ‘tomorrow’ (Wong 2002:2)



This study provides acoustic proof for Cheung (1986)’s claim that there are two forms of syllable contraction as in (13). The ‘plain form’ shows a smaller degree of contraction while the ‘coerced form’ is a result of a higher degree of contraction which means that more segments of the citation form are deleted.

(13) The plain and coerced form of syllable contraction (Cheung 1986)

<u>Chinese Char.</u>	<u>Gloss</u>	<u>Citation</u>	<u>Plain</u>	<u>Coerced</u>
比較	comparatively	pej kaw	peaw	pew
而家	now	ji ka	jia	ja
其實	in fact	k ^h ej sət	k ^h eət	k ^h ət
可能	perhaps	hɔ ləŋ	hɔəŋ	hɔŋ

Given there are different degrees of contraction, how can we relate this observation with the driving forces of connected speech? How does the interaction of conflicting forces affect the degree of contraction? If there is any correlation, can it be represented formally in the derivation of contracted syllables? I will address this question with constraint interaction in the discussion of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ contraction.

2.4 The templatic approach to rime change

Lin (1993) explains rime change in Chinese affixation from the perspective of morphology-phonology interface. Segmental alternations of diminutive affixes are presented and discussed. It is argued that the different realizations of *er* and *zi* in a dialect are derived from the same degenerate affix underlyingly. They are considered micromorphemes (Lin 1993:654). Non-linear prosodic templates constrain the shape of the derived forms. An important principle introduced by this study is Prosodic Licensing. Only when a degenerate suffix is dominated by a higher prosodic structure, it can be licensed to surface in the output form. Otherwise, it is erased from the surface via stray erasure. Results of data investigation show that affix preservation is more favored. On this basis, a principle of affix preservation is formulated as defined in (14). It acts to motivate other phonological processes during the derivation of a degenerate affix.

(14) Affix Manifestation Principle (AMP):

Within the limits of universal and language-specific constraints, the effect of affixation of a phonologically expressed morpheme is always manifested. (Lin 1993:656)

This principle is crucial to draw the bottom line of syllable contraction – a morpheme may manifest itself in different forms, often reduced forms; yet it is not preferred to be manifested in the form of zero without any phonological instantiation. When it comes to $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ strings, the AMP is a stimulus for one to ask how morpheme preservation interacts with phonological behavior in the architecture of OT. I hypothesize that the AMP also prevails in Cantonese to limit the degree of syllable reduction. When it enters the OT hierarchy, it is a faithfulness constraint of the highest rank.

2.5 The autosegmental approach to syllable contraction

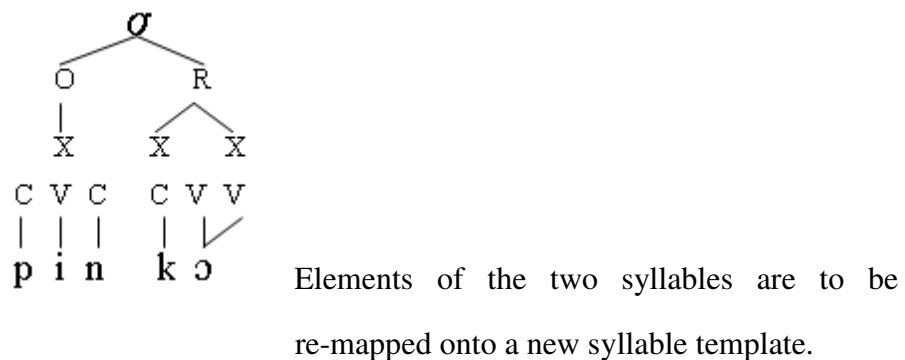
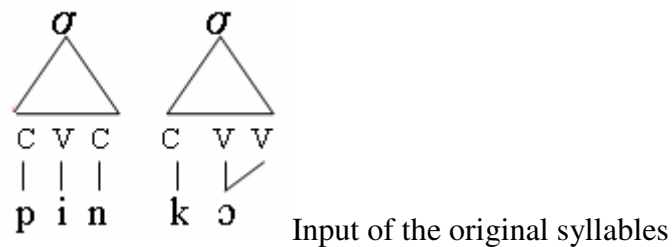
Lee (2003) is a comprehensive study on Cantonese syllable fusion from different aspects. 647 occurrences of syllable fusion from *The Corpus of Spoken Cantonese* are transcribed and analyzed. It provides a statistical report on the tendency for different structures to receive contraction. Her generalizations include (1) open syllables facilitate fusion; (2) initial [j] or [h] of the second syllable favor fusion.

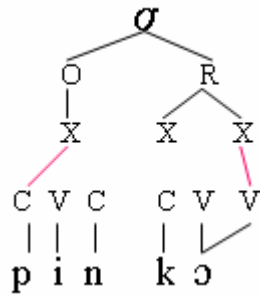
Given these tendencies in Cantonese, it comes to the question whether certain properties of sounds favor syllable contraction in other natural languages, too. If

articulatory complexity is rooted in the place and manner of articulation, it is probable that certain classes of sounds are vulnerable to syllable contraction universally. Hence, how can we account for the universal tendencies of connected speech in a unified manner? I will propose that the universality of OT constraints provides a unified model to address universal tendencies of syllable contraction.

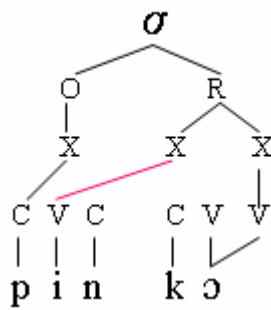
Lee (2003) further provides an autosegmental account to derive compressed forms. The account has provided a conceptual and technical basis on which generalizations can be made. Below is an example of the contraction of 邊個 /pin kɔ/ ‘who’ into [piɔ]:

Lee’s (2003:90) autosegmental analysis of syllable fusion:

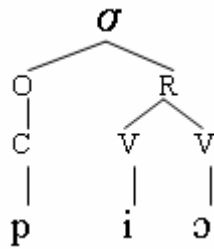




Edge-in association takes place in which the elements on the edges are associated to the onset and rhyme of the new syllable.



Medial spreading: the vowel [i] is associated to the rhyme of the new syllable.



Stray erasure of deleted segments
Output: the contracted syllable [piɔ]

The way elements of a syllable are re-mapped onto a syllable template is very much language-specific. Syllable templates vary from language to language. For instance, some languages allow complex onset and complex coda. It results in a different way for elements to resyllabify in connected speech. If one believes that data of connected speech reveals some universal properties of sounds, it is questionable whether any theoretical framework can address universality and

language specificity on a common ground. The autosegmental approach is adequate to describe the situation of a particular language, yet fails to draw relationship with cross-linguistic tendencies of connected speech.

2.6 The prosodic approach to syllable contraction

Huang, Yan and Lu (2005) is a comprehensive study of syllable contraction (in their words, the ‘swallowing’ of a syllable 吞音) in the Tianjin dialect. The collected data range from disyllabic to 5-syllable words. The paper dedicates a large part on trisyllabic words. Different degrees of ‘swallowing’ in connected speech are described. In some cases, a whole syllable is deleted which means a syllable is reduced into zero. In other cases, only a rime, a segment or a feature is affected.

In addition to descriptive data, this study provides a statistical report to conclude which syllable in a polysyllabic phrase is most unstable, and thus most affected after contraction. It is found that in a trisyllabic sequence, the second syllable is most unstable while the last syllable is least affected, which echoes with Chao (1968). This observation can be summarized in a stability hierarchy. In a trisyllabic sequence, the hierarchy of the three syllables is ‘less stable – least stable – most stable’. This hierarchy appears parallel to the relative stress of a

trisyllabic word – ‘less heavy – light – most heavy’. (Huang, Yan and Lu 2005)

The parallel hierarchies of syllable stability and stress leads to the insightful discussion of the relationship between syllable contraction and prosody. In this paper, foot binarity is the key to explain why trisyllabic words are contracted into two syllables. It states that in Tianjin dialect, two syllables together form a foot, a prosodic constituent. The existence of a degenerate foot in trisyllabic words violates foot binarity. The output of contraction is a compromise to fulfill the prosodic requirement.

The case of Tianjin dialect stimulates one to ask whether prosody is a decisive factor contributing to syllable contraction in Cantonese. First, are the hierarchies of syllable stability and stress applicable to Cantonese, particularly the trisyllabic $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ pattern? Second, what is the foot structure in Cantonese? How does this structure affect the behavior of /m/ when it is positioned in different strings (such as $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ versus $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$)? The answers to these questions are going to provide important assumptions for the data analysis in Chapter 5.

2.7 The optimality-theoretic approach to syllable contraction

Hsu (2003) is the first optimality-theoretic study on Cantonese syllable contraction. It focuses on constraints that govern the output nucleus. It proposes

eight constraints to explain the selection of the output vowel:

- EDGE-IN
- LENGTH COMPETITION: The nucleus with longer duration wins out.
- MID VOWEL FIRST: If the input nuclei include a low vowel and a mid vowel, a long mid vowel surfaces.
- NO VS: A short vowel cannot precede a voiceless stop in the output
- PHONOTACTICS (LAB): The co-occurrence of a labial onset and a labial coda is prohibited.
- PHONOTACTICS (ONSET): Complex onset is prohibited.
- PHONOTACTICS (YOD): The sequence of front nonlow tense vowels followed by the palatal glide is prohibited.
- NON-IDENTITY: Total identity between the contracted form and either of the source syllables is prohibited

It concludes with the following constraint ranking:

NON-IDENTITY, NO VS, PHONOTACTICS (YOD), MID VOWEL FIRST >>
EDGE-IN >> LENGTH COMPETITION, PHONOTACTICS (LAB),
PHONOTACTICS (ONSET)

(15) Contraction of /beŋ⁵⁵ bəm^{55/3} 乒乓 ‘table tennis’ into [bɛ:m] (Hsu 2003)

Input: beŋ ⁵⁵ bəm ⁵⁵	NON-IDENTITY	MID VOWEL FIRST	EDGE-IN	PHONOTACTICS (LAB)
☞ a. bɛ:m ⁵⁵				*
b. bɛ: ⁵⁵			*!	
c. bəm ⁵⁵		*!		*
d. bəm ⁵⁵	*!	*		*

Example (15) demonstrates how an optimal output is selected by a given constraint hierarchy. Candidate (d) is identical to the second syllable of the input form, which incurs a fatal violation of NON-IDENTITY. Candidate (c) surfaces a short mid vowel instead of a long one, violating MID VOWEL FIRST. Candidate (b)

³ The transcription of 乒乓 should be /peŋ⁵⁵ pəŋ⁵⁵/ and [pɛ:m] since there is no voiced labial stop /b/ in the Cantonese consonant inventory. I cite the exact data from Hsu (2003), so the input appears as /beŋ⁵⁵ bəm⁵⁵/ in (15).

erases the right edge of the input /-m/ which is a violation of EDGE-IN. Candidate (a) violates the lowest ranked constraint PHONOTACTICS (LAB) since the labial consonants [b] and [m] occur in the same syllable. It is selected as optimal in which the output nucleus is [ɛ̃] rather than [e] or [ɐ].

While the study focuses on vowels, the issue of Cantonese nasal nuclei remains an untouched area. Since nasal nuclei are characterized by different sonority properties from that of vowels, the proposed constraints are not adequate to predict the competition between vocalic and nasal nuclei. In addition, a syllabic nasal often stands alone without an onset. When syllables contract, can the nasal retain its syllabicity after edge-in association? Is an unmarked vocalic nucleus more competitive than the marked syllabic nasal during the selection of optimal output? Again, it shows that the status of the syllabic nasal in Cantonese syllable contraction remains a gap in the literature. Given the frequent occurrence of the morpheme /m̩²¹/ in the language and the intriguing issues involved, the behavior of the syllabic nasal deserves a careful investigation, a detailed discussion and a formal analysis.

2.8 Hypotheses

Having presented previous approaches to syllable contraction, I summarize the gaps in the literature by putting forward the following hypotheses in regard to the behavior of the syllabic labial nasal /m̩²¹/ during Cantonese syllable contraction:

- (i) When syllable contraction takes place, the morpheme 唔 /m̩²¹/ ‘not’ is always manifested with phonological instantiation;
- (ii) Variant forms of /m̩²¹/ in connected speech are governed by the same set of universal constraints while variation is attributed to constraint re-ranking;
- (iii) The choice of a variant form of /m̩²¹/ is dependent upon the priority given to the preservation of phonological contrast, which is represented by the ranking of faithfulness constraints;
- (iv) Asymmetrical behavior of /m̩²¹/ in different A-not-A constructions is motivated by prosodic constituency.

CHAPTER 3 PATTERNS OF SYLLABLE CONTRACTION

This chapter is dedicated to generalize patterns of syllable contraction where /m̩²¹/ is concerned. These patterns are going to show that the choice between σ_1 -m̩²¹ or m̩²¹- σ_2 contraction as shown in Chapter 1 is not random but systematic. It is going to show that when /m̩²¹/ is sandwiched in different strings, its behavior also differs. This descriptive section paves the way for the explanatory analysis in the next chapter which accounts for the forces governing these patterns.

In the discussion of the A-not-A paradigm of Cantonese interrogative constructions, Cheung (2001) has described the diachronic evolution of the following four types of A-not-A interrogatives since the nineteenth century:

(Note that data transcription is in Yale romanization as it is.)

1) V + not-VP

e.g. 你 識 唔 識 寫 字 呢?
neih sik mh sik se jih ni
2SG knowNEG know write character PRT
'Do you know how to write?' (Cheung 2001:207)

2) VP + not-VP

e.g. 歡喜 唔 歡喜?
funhei mh funhei?
Like NEG like
'Do you like to have it so?' (Cheung 2001:198)

3) VP + not-V

e.g. 去飯 唔 去 呢?
heui gwai mh heui ni
go return NEG go return PRT
'Are you going back?' (Cheung 2001:205)

4) VP-not

e.g. 醫生 係 處 唔 呢?
yisang hai syu mh ni
doctor be atplace NEG PRT
'Is the doctor in?' (Cheung 2001:213)

In the above cases, /m̩²¹/ is sandwiched between different numbers of syllables. Among them, the third and fourth types of A-not-A constructions are declining after the 1960's (Cheung 2001:227) and are no longer used in Cantonese. They are to be eliminated from this study. The following discussion focuses on the first type 'V not-VP', which can either be a σ_1 -m̩²¹- σ_2 string or a σ_1 -m̩²¹- σ_2 - σ_3 string. Both a monosyllabic and a disyllabic¹ adjective² can be projected into a VP preceded by 'not'. For example, the phrase 'humid or not' can be expressed as 濕唔濕 /sɛp⁵ m̩²¹ sɛp⁵/ (a monosyllabic adjective) as well as 潮唔潮濕 /ts^hiw²¹ m̩²¹ ts^hiw²¹ sɛp⁵/ (a disyllabic adjective). The second type of A-not-A construction is in the form of σ_1 - σ_2 -m̩²¹- σ_3 - σ_4 such as 潮濕唔潮濕 /ts^hiw²¹ sɛp⁵ m̩²¹ ts^hiw²¹ sɛp⁵/. It is less commonly used by Cantonese speakers nowadays. However, it is still used occasionally when one has to draw emphasis. I will show that /m̩²¹/ behaves differently in these strings in regard to syllable contraction phenomena. In addition, the simple negation m̩²¹- σ_1 pattern such as 唔濕 /m̩²¹ sɛp⁵/ is included in the last part of this chapter.

¹ I do not include any disyllabic strings with a verb-object internal structure. It eliminates the possibility of syntactic influence to phonology.

² I take adjective and verb as the one class in Chinese.

3.1 *The σ_1 - m^{21} - σ_2 string*

The data of trisyllabic σ_1 - m^{21} - σ_2 strings is to be discussed from two levels – the segmental level followed by the tonal level.

3.1.1 *Segmental issues*

The focus of this section is the behavior of segments during syllable contraction. Tone is not to be shown in data transcription. Tonal issues will be brought into discussion in 3.1.2.

3.1.1.1 *σ_1 - m^{21} contraction*

(16) shows three possibilities of contraction in regard to σ_1 - m^{21} - σ_2 strings. The leftmost column shows the Chinese characters of each item. The second column from the left is the English gloss of each item. The third column presents the transcription of data in citation form. The fourth column demonstrates σ_1 - m^{21} contraction in which / m / is attached to σ_1 and becomes a coda [- m]. The fifth column demonstrates m^{21} - σ_2 contraction in which / m / replaces the original onset of σ_2 , becoming [m-]. The rightmost column presents σ_1 - m^{21} contraction with regressive assimilation. The place feature of [m] is assimilated to the place feature of the following consonant. For example, the bilabial nasal [m] becomes an alveolar nasal [n] when followed by the voiceless alveolar stop [t].

(16) $\sigma_1\text{-m}^{21}$ contraction versus $\text{m}^{21}\text{-}\sigma_2$ contraction

Chinese Character	English gloss (X-or-not)	Citation	$\sigma_1\text{-m}^{21}$ contraction	$\text{m}^{21}\text{-}\sigma_2$ contraction	$\sigma_1\text{-m}^{21}$ contraction with regressive Assimilation
Labial onsets					
幫唔幫	help	pɔŋ m̩ pɔŋ	pɔm pɔŋ	*pɔŋ mɔŋ	*pɔm pɔŋ
怕唔怕	scared of	p ^h a: m̩ p ^h a:	p ^h am p ^h a:	*p ^h a: ma:	*p ^h am p ^h a:
買唔買	buy	maj m̩ maj	mam maj	*maj maj	*mam maj
苦唔苦	bitter	fu: m̩ fu:	fum fu:	*fu: mu:	*fum fu:
滑唔滑	smooth	wat m̩ wat	wam wat	*wat mat	*wam wat
Alveolar onsets					
多唔多	many	tɔ: m̩ tɔ:	tɔm tɔ:	*tɔ: mɔ:	*tɔn tɔ:
睇唔睇	look at	t ^h ej m̩ t ^h ej	t ^h em t ^h ej	*t ^h ej məj	*t ^h en t ^h ej
叻唔叻	smart	lek m̩ lek	lem lek	*lek mek	*len lek
Palatal onsets					
忍唔忍	tolerate	jən m̩ jən	jəm jən	*jən mən	*jɛŋ jən
移唔移	move	ji: m̩ ji:	jim ji:	*jim mi:	*jiŋ ji:
Velar onsets					
割唔割	cut	kət m̩ kət	kɔm kət	*kət mət	*kɔŋ kət
曲唔曲	bent	k ^h ok m̩ k ^h ok	k ^h om k ^h ok	*k ^h ok mok	*k ^h oŋ k ^h ok
慣唔慣	accustomed	k ^w an m̩ k ^w an	k ^w am k ^w an	*k ^w an man	*k ^w aŋ k ^w an
誇唔誇	exaggerated	k ^{wh} a: m̩ k ^{wh} a:	k ^{wh} am k ^{wh} a:	*k ^{wh} a: ma:	*k ^{wh} a:ŋ k ^{wh} a:
Glottal onsets					
開唔開	open	hɔj m̩ hɔj	hɔm hɔj	hɔj mɔj	N/A (no glottal nasal)
係唔係	be	həj m̩ həj	həm həj	həj məj	
去唔去	go	həŋ m̩ həŋ	həm həŋ	həŋ məŋ	
合唔合	match	həp m̩ həp	həm həp	həp məp	
學唔學	learn	hɔk m̩ hɔk	hɔm hɔk	hɔk mɔk	
餓唔餓	hungry	ɔ: m̩ ɔ:	ʔɔm ʔɔ:	ʔɔ: mɔ:	
愛唔愛	love	ɔj m̩ ɔj	ʔɔm ʔɔj	ʔɔj mɔj	
啱唔啱	correct	am m̩ am	ʔam ʔam	ʔam mam	
惡唔惡	fierce	ɔk m̩ ɔk	ʔɔm ʔɔk	ʔɔk mɔk	
噏唔噏	utter	əp m̩ əp	ʔəm ʔəp	ʔəp məp	

3.1.1.1.1 *The role of the onset*

The fourth column of (16) shows that $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction is not restricted to any particular group of onset consonants of σ_1 . It is permissible in all items. However, the fifth column shows that the place of articulation of the onset of σ_2 is a factor to constrain $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction. When the σ_1 has a labial, alveolar, palatal or velar onset, $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction is the only choice. For glottal onsets, both $\sigma_1\text{-}\mathfrak{m}^{21}$ type and $\mathfrak{m}^{21}\text{-}\sigma_2$ type are permissible. The former usually occurs when speech tempo is comparatively slow; whereas the latter occurs when speech tempo speeds up. This choice is only available to glottal consonants, and it is to be further elaborated in section 3.1.1.2.

As shown in the last column of (16), the onset of σ_2 , which is identical to that of σ_1 , does not cause any changes onto the preceding nasal / \mathfrak{m} /, which is different from the case of Japanese / η / . In Japanese connected speech, the place feature of the syllabic alveolar nasal is often assimilated to the following consonant (Kobayashi 1969). The onset of the following syllable leaves impact to the preceding nasal in the process of syllable contraction. Regressive assimilation takes place:

	<u>Citation</u>	<u>Connected speech</u>
安否	a η pi	am pi
安藤	a η do:	an do:
般若	ha η ja	haj ja

安価 a ŋ ka aŋ ka

The Japanese connected speech data above show that the syllabic alveolar nasal /ŋ/ can be produced in four different ways – [m, n, ɲ, ŋ] which are in complementary distribution. They occur in different phonological contexts, depending on the place of articulation of the following consonant. /ŋ/ is realized as a labial [m] when it is followed by a labial [p]. When followed by a palatal [ɲ], it is realized as a palatal nasal [ɲ]. When followed by a velar stop [k], it is realized as a velar nasal [ŋ]. In this regard, Cantonese syllable contraction is different from the case of Japanese. Cantonese /m̥²¹/ does not undergo homorganic place assimilation with its following consonant. The labial place feature of /m̥²¹/ is consistent under any circumstances.

3.1.1.1.2 Open syllables

(17) presents three possibilities of σ_1 -m̥²¹ contraction when σ_1 does not have a coda. /m̥²¹/ is always attached to its preceding syllable σ_1 , losing its syllabicity in connected speech. In the fourth column from the left, /m̥/ is attached to σ_1 as a coda. The resulting syllable is longer than the original σ_1 . The data in the fifth column demonstrate the same process except that the long vowel of σ_1 is reduced. In the last column, the syllabic nasal /m̥/ is compressed into a segmentless nasal feature, attaching to the vowel of σ_1 .

(17) When σ_1 is codaless

Chinese Character	English gloss (X-or-not)	Citation	$\sigma_1\text{-}\mathfrak{m}^{21}$ contraction (slower)	$\sigma_1\text{-}\mathfrak{m}^{21}$ contraction (faster)	The nasal realized as a feature
怕唔怕	scared of	p ^h a: m̩ p ^h a:	p ^h a:m̩ p ^h a:	p ^h am̩ p ^h a:	*p ^h ã: p ^h a:
苦唔苦	bitter	fu: m̩ fu:	fu:m̩ fu:	fum̩ fu:	*fũ: fu:
多唔多	many	tɔ: m̩ tɔ:	tɔ:m̩ tɔ:	tɔm̩ tɔ:	*tõ: tɔ:
知唔知	know	tsi: m̩ tsi:	tsi:m̩ tsi:	tsim̩ tsi:	*tsĩ: tsi:
遲唔遲	late	ts ^h i: m̩ ts ^h i:	ts ^h i:m̩ ts ^h i:	ts ^h im̩ ts ^h i:	*ts ^h ĩ: ts ^h i:
寫唔寫	write	se: m̩ se:	sa:m̩ sa:	sam̩ sa:	*sã: sa:
試唔試	try	si: m̩ si:	si:m̩ si:	sim̩ si:	*sĩ: si:
Ø 唔 Ø	aching	la: m̩ la:	la:m̩ la:	lam̩ la:	*lã: la:
移唔移	move	ji: m̩ ji:	ji:m̩ ji:	jim̩ ji:	*jĩ: ji:
過唔過	cross	k ^w ɔ: m̩ k ^w ɔ:	k ^w ɔ:m̩ k ^w ɔ:	k ^w ɔm̩ k ^w ɔ:	*k ^w õ: k ^w ɔ:
假唔假	fake	ka: m̩ ka:	ka:m̩ ka:	kam̩ ka:	*kã: ka:

As suggested by the fourth and fifth columns, reduction of the original nucleus is optional, depending on speech tempo. With faster speech tempo, a long vowel is reduced. For example, both [p^ha:m̩ p^ha:] and [p^ham̩ p^ha:] can be the contracted form from the citation form /p^ha: m̩ p^ha:/. The latter with vowel length reduction is a more compressed form than the former³.

The last column of (17) suggests that while /m̩/ is reduced into a coda consonant [-m], it is never reduced further into a segmentless nasal feature, which is different from the case of Japanese connected speech. In Japanese, the syllabic nasal /ŋ/ is reduced into a nasal feature which attaches to the preceding vowel or the following vowel, resulting in a nasalized vowel. (Kobayashi 1969)

³ In the discussion afterwards, whenever open syllables are quoted, only the more compressed form of syllable contraction (with the diacritic : deleted) is to be shown in data transcription tables.

三惡	sa ɲ a kɯ	[sãakɯ]
春雲	ʃɯ ɲ u ɲ	[ʃũɯɲ]
犬猿	ke ɲ e ɲ	[kẽeɲ]
山陰	sa ɲ i ɲ	[saĩɲ]

On the contrary, the syllabic nasal /m/ is never realized as a nasal feature in Cantonese. No matter how rapid speech tempo is, it is never reduced into a nasal feature attaching to the preceding vowel. It is always realized as a segment.

Different languages allow different degrees of reduction in regard to the behavior of the syllabic nasal in connected speech. While Japanese allows the compression of a nasal segment into a segmentless nasal feature, Cantonese forbids such process. An important generalization can be drawn - the status of the labial nasal as a segment is strictly maintained under any circumstances.

3.1.1.1.3 Offglides

(18) shows two possibilities of $\sigma_1\text{-m}^{21}$ contraction when σ_1 has an offglide in the rime. In both cases, /m/ attaches to the preceding syllable and becomes a coda [-m]. In the fourth column, the offglide remains intact after syllable contraction. In the last column, the offglide of σ_1 is deleted.

(18) When σ_1 has an offglide in the syllable rime

Chinese Character	English gloss (X-or-not)	Citation	$\sigma_1\text{-m}^{21}$ contraction (slower)	$\sigma_1\text{-m}^{21}$ contraction (faster)
跳唔跳	jump	t ^{hiw} m̩ t ^{hiw}	t ^{hiu} m t ^{hiw}	t ^{hi} m t ^{hiw}
𪗇唔𪗇	angry	l ^{ew} m̩ l ^{ew}	l ^{eu} m l ^{ew}	l ^{em} l ^{ew}
偷唔偷	steal	t ^{hew} m̩ t ^{hew}	t ^{heu} m t ^{hew}	t ^{hem} t ^{hew}
臭唔臭	stinky	ts ^{hew} m̩ ts ^{hew}	ts ^{heu} m ts ^{hew}	ts ^{hem} ts ^{hew}
油唔油	greasy	j ^{ew} m̩ j ^{ew}	j ^{eu} m j ^{ew}	j ^{em} j ^{ew}
煲唔煲	cook	pow m̩ pow	poum pow	pom pow
做唔做	do	tsow m̩ tsow	tsoum tsow	tsom tsow
高唔高	tall	kow m̩ kow	koum kow	kom kow
跑唔跑	run	p ^{haw} m̩ p ^{haw}	p ^{hau} m p ^{haw}	p ^{ham} p ^{haw}
追唔追	chase	tseu̯ m̩ tseu̯	tseu̯m tseu̯	tsem̩ tseu̯
配唔配	match	p ^{hu̯} m̩ p ^{hu̯}	p ^{hu̯} m p ^{hu̯}	p ^{hum} p ^{hu̯}
派唔派	deliver	p ^{haj} m̩ p ^{haj}	p ^{haim} p ^{haj}	p ^{ham} p ^{haj}
買唔買	buy	maj m̩ maj	maim maj̯	mam maj̯
大唔大	big	taj m̩ taj	taim taj̯	tam taj̯
𪗇唔𪗇	step on	ts ^{haj} m̩ ts ^{haj}	ts ^{haim} ts ^{haj}	ts ^{ham} ts ^{haj}
乖唔乖	obedient	k ^{waj} m̩ k ^{waj}	k ^{waim} k ^{waj}	k ^{wam} k ^{waj}
壞唔壞	bad	waj m̩ waj	waim waj	wam waj
廢唔廢	useless	f ^{ej} m̩ f ^{ej}	f ^{eim} f ^{ej}	f ^{em} f ^{ej}
睇唔睇	look at	t ^{hej} m̩ t ^{hej}	t ^{heim} t ^{hej}	t ^{hem} t ^{hej}
計唔計	count	k ^{ej} m̩ k ^{ej}	k ^{eim} k ^{ej}	k ^{em} k ^{ej}
奇唔奇	strange	k ^{hej} m̩ k ^{hej}	k ^{heim} k ^{hej}	k ^{hem} k ^{hej}

Similar to the case of open syllables, the reduction of the rime in the original syllable is optional since the result of contraction in both columns are acceptable.

With a fast speech tempo, the offglides are deleted; and in a relatively slower speech tempo, the offglide is kept, forming an exceptionally long rime with the coda [-m]. In the products of syllable contraction, the labial-velar glide [w] and palatal glide [j] are realized as the high back rounded vowel [u] and the high front unrounded vowel [i] respectively. The long rimes such as [-ium], [-vum], [-aim], and [-vim] are actually illegal in the citation form, both in terms of syllable length and phonotactic constraints. They are only permissible in connected speech.

3.1.1.1.4 Checked syllables (oral stop as coda)

(19) has demonstrated four possibilities of $\sigma_1\text{-}\underset{\cdot}{\text{m}}^{21}$ contraction when σ_1 has an oral stop as syllable coda. In the fourth column, [-m] replaces the original oral stop as the final consonant of σ_1 and deletion is involved. In the fifth column, [-m] is attached to σ_1 without deleting the original coda. A complex coda is formed. In the sixth column, / $\underset{\cdot}{\text{m}}$ / does not lose its syllabicity. Instead, it remains to be the nucleus of a syllable. Meanwhile, the coda of σ_1 is resyllabified as the onset and it attaches to [$\underset{\cdot}{\text{m}}$].

(19) When σ_1 has an obstruent coda [p, t, k]

Chin. Char (X 唔 X)	English gloss (X-or-not)	Citation	Deletion of oral stop coda	complex coda [Obs+m]	Resyllabification σ [Obs+m]
貼	stick	t ^h ip m̩ t ^h ip	t ^h im t ^h ip	*t ^h ipm t ^h ip	*t ^h i pm̩ t ^h ip
入	enter	jəp m̩ jəp	jəm jəp	*jəpm jəp	*jə pm̩ jəp
濕	wet	səp m̩ səp	səm səp	*səpm səp	*sə pm̩ səp
急	hurry	kəp m̩ kəp	kəm kəp	*kəpm kəp	*kə pm̩ kəp
澀	bitter	kip m̩ kip	kim kip	*kipm kip	*ki pm̩ kip
闊	wide	fut m̩ fut	fum fut	*futm fut	*fu tm̩ fut
辣	spicy	lat m̩ lat	lam lat	*latm lat	*la tm̩ lat
熱	hot	jit m̩ jit	jim jit	*jitm jit	*ji tm̩ jit
滑	smooth	wat m̩ wat	wam wat	*watm wat	*wa tm̩ wat
刮	scrape	k ^w at m̩ k ^w at	k ^w am k ^w at	*k ^w atm k ^w at	*k ^w a tm̩ k ^w at
薄	thin	pək m̩ pək	pəm pək	*pək m̩ pək	*pə km̩ pək
泊	park (a car)	p ^h ak m̩ p ^h ak	p ^h am p ^h ak	*p ^h akm p ^h ak	*p ^h a km̩ p ^h ak
剝	peel off /remove	mək m̩ mək	məm mək	*mək m̩ mək	*mə km̩ mək
服	surrender	fok m̩ fok	fom fok	*fokm fok	*fo km̩ fok
得	able	tək m̩ tək	təm tək	*tək m̩ tək	*tə km̩ tək
禿	bald	t ^h ok m̩ t ^h ok	t ^h om t ^h ok	*t ^h okm t ^h ok	*t ^h o km̩ t ^h ok
叻	smart	lək m̩ lək	ləm lək	*ləkm lək	*lə km̩ lək
窄	narrow	tsak m̩ tsak	tsam tsak	*tsakm tsak	*tsa km̩ tsak
拆	demolish	ts ^h ak m̩ ts ^h ak	ts ^h am ts ^h ak	*ts ^h akm ts ^h ak	*ts ^h a km̩ ts ^h ak
識	know	sek m̩ sek	sem sek	*sekm sek	*se km̩ sek
焗	stuff	kok m̩ kok	kom kok	*kokm kok	*ko km̩ kok
曲	bent	k ^h ok m̩ k ^h ok	k ^h om k ^h ok	*k ^h okm k ^h ok	*k ^h o km̩ k ^h ok

The fact that items in the fifth column are unacceptable further elucidates that a complex coda is phonotactically impermissible in Cantonese syllable structure. In addition, cross-linguistic syllable typology states that coda must fall in sonority (Kenstowicz 1994). The complex coda in the fifth column of (19) goes against this principle. The sequence of a voiceless oral stop followed by a

sonorant nasal leads to the rise in sonority in the rime. It rules out the possibility for an oral stop to form a complex coda with its following nasal during syllable contraction.

The second possibility, in which the coda of σ_1 is resyllabified as the onset of a new syllable, is also ruled out. This mechanism does not reduce the number of syllables in the output, and the syllabic nasal does not lose its syllabicity. In fact, it does not involve any contraction, but is simply a process of resyllabification. The syllabic nasal remains to be the nucleus in the new syllable. In Cantonese connected speech, this is impermissible as indicated by the sixth column of (19).

The only acceptable type of contraction is that while the [-m] takes up the position of the coda, the original oral stop coda gets deleted. It is indicated by the fourth column of (19). It does not form any complex coda and it also reduces the number of output syllables from three into two. In all cases, no matter the coda of the source syllable σ_1 is [-p], [-t] or [-k], it is replaced by [-m].

3.1.1.1.5 Nasal coda

(20) presents two possibilities of $\sigma_1\text{-m}^{21}$ contraction when σ_1 has a nasal coda. In the fourth column, [-m] replaces the original nasal coda after syllable contraction. Items in the last column demonstrate total deletion of / m^{21} / after syllable contraction.

(20) When σ_1 has a bilabial nasal coda

Chinese Char.	English gloss (X-or-not)	Citation	$\sigma_1\text{-m}^{21}$ contraction	Total deletion of / m^{21} /
Labial nasal coda				
掂唔掂	capable	tim m̩ tim	tim tim	*tim tim
甜唔甜	sweet	t ^h im m̩ t ^h im	t ^h im t ^h im	*t ^h im t ^h im
臉唔臉	soft	lɛm m̩ lɛm	lɛm lɛm	*lɛm lɛm
尖唔尖	pointed	tsim m̩ tsim	tsim tsim	*tsim tsim
深唔深	difficult	sɛm m̩ sɛm	sɛm sɛm	*sɛm sɛm
飲唔飲	drink	jɛm m̩ jɛm	jɛm jɛm	*jɛm jɛm
淫唔淫	erotic	jɛm m̩ jɛm	jɛm jɛm	*jɛm jɛm
敢唔敢	dare	kɛm m̩ kɛm	kɛm kɛm	*kɛm kɛm
暗唔暗	dim	ɛm m̩ ɛm	?ɛm ?ɛm	*?ɛm ?ɛm
Alveolar nasal coda				
變唔變	change	pin m̩ pin	pim pin	*pin pin
問唔問	ask	mɛn m̩ mɛn	mɛm mɛn	*mɛn mɛn
煩唔煩	troublesome	fan m̩ fan	fam fan	*fan fan
短唔短	short	tyn m̩ tyn	tym tyn	*tyn tyn
填唔填	fill in	t ^h in m̩ t ^h in	t ^h im t ^h in	*t ^h in t ^h in
懶唔懶	lazy	lan m̩ lan	lam lan	*lan lan
真唔真	real	tsɛn m̩ tsɛn	tsɛm tsɛn	*tsɛn tsɛn
殘唔殘	worn out	ts ^h an m̩ ts ^h an	ts ^h am ts ^h an	*ts ^h an ts ^h an
新唔新	new	sɛn m̩ sɛn	sɛm sɛn	*sɛn sɛn
見唔見	see	kin m̩ kin	kim kin	*kin kin
近唔近	close	k ^h ɛn m̩ k ^h ɛn	k ^h ɛm k ^h ɛn	*k ^h ɛn k ^h ɛn
慣唔慣	accustomed	k ^w an m̩ k ^w an	k ^w am k ^w an	*k ^w an k ^w an

換唔換	exchange	wun mə wun	wum wun	*wun wun
Velar nasal coda				
幫唔幫	help	pəŋ mə pəŋ	pəm pəŋ	*pəŋ pəŋ
平唔平	cheap	p ^h ɛŋ mə p ^h ɛŋ	p ^h ɛm p ^h ɛŋ	*p ^h ɛŋ p ^h ɛŋ
忙唔忙	busy	məŋ mə məŋ	məm məŋ	*məŋ məŋ
放唔放	release	fəŋ mə fəŋ	fəm fəŋ	*fəŋ fəŋ
定唔定	stable	tɛŋ mə tɛŋ	tɛm tɛŋ	*tɛŋ tɛŋ
聽唔聽	listen	t ^h ɛŋ mə t ^h ɛŋ	t ^h ɛm t ^h ɛŋ	*t ^h ɛŋ t ^h ɛŋ
涼唔涼	cool	lœŋ mə lœŋ	lœm lœŋ	*lœŋ lœŋ
正唔正	good	tɕɛŋ mə tɕɛŋ	tɕɛm tɕɛŋ	*tɕɛŋ tɕɛŋ
請唔請	invite	ts ^h ɛŋ mə ts ^h ɛŋ	ts ^h ɛm ts ^h ɛŋ	*ts ^h ɛŋ ts ^h ɛŋ
鬆唔鬆	loose	səŋ mə səŋ	səm səŋ	*səŋ səŋ
勇唔勇	courageous	jəŋ mə jəŋ	jəm jəŋ	*jəŋ jəŋ
講唔講	tell	kəŋ mə kəŋ	kəm kəŋ	*kəŋ kəŋ
強唔強	strong	k ^h œŋ mə k ^h œŋ	k ^h œm k ^h œŋ	*k ^h œŋ k ^h œŋ
黃唔黃	yellow	wəŋ mə wəŋ	wəm wəŋ	*wəŋ wəŋ

In all cases, nasal coda deletion takes place during σ_1 - m^{21} contraction. When /m/ contracts with a syllable having a labial nasal coda, the original coda [-m] of σ_1 is deleted and replaced by the non-syllabic nasal [-m]. These two codas are segmentally identical on the surface. It results in a disyllabic string containing two segmentally identical syllables as shown in the shaded boxes of (20). For instance, a reduplicated adjective with the citation form /t^him t^him/ ‘sweet’ 甜甜 and the interrogative construction /t^him mə t^him/ 甜唔甜 ‘sweet or not’ share the same connected speech form, which is [t^him t^him]. It leads to a logical argument that the whole morpheme /m²¹/ is actually deleted from the product of contraction. However, when σ_1 has an alveolar nasal coda [n] or velar nasal coda [ŋ], total deletion of /m²¹/ is prohibited. This provides evidence to rule out the

possibility of total deletion of /m²¹/ during syllable contraction.

3.1.1.2 m²¹-σ₂ contraction

As shown in (16) previously, m²¹-σ₂ contraction is limited to glottal onsets of σ₂. In the Cantonese phonetic inventory, there are two glottal onsets - [h] and [ʔ]. The two glottal consonants are to be discussed separately.

3.1.1.2.1 The glottal fricative [h]

In the following table, all σ₂s has the glottal fricative [h] as the onset. The fourth column has listed the results of σ₁-m²¹ contraction. On the other hand, the last column shows products of m²¹-σ₂ contraction in which the original onset of σ₂ is deleted and replaced by [m-].

(21) When σ₂ has [h] as the onset

Chinese Character	English gloss (X-or-not)	Citation	σ ₁ -m ²¹ contraction (slower)	m ²¹ -σ ₂ contraction (faster)
係唔係	be	həj m̩ həj	həm həj	həj məj
開唔開	open	hɔj m̩ hɔj	hɔm hɔj	hɔj mɔj
去唔去	go	həŋ m̩ həŋ	həm həŋ	həŋ məŋ
好唔好	good	how m̩ how	hom how	how mow
考唔考	take a test	haw m̩ haw	ham haw	haw maw
曉唔曉	know	hiw m̩ hiw	him hiw	hiw miw
怯唔怯	timid	hip m̩ hip	him hip	hip mip
合唔合	match	həp m̩ həp	həm həp	həp məp
嚇唔嚇	frighten	hak m̩ hak	ham hak	hak mak
黑唔黑	dark	hək m̩ hək	həm hək	hək mək
學唔學	learn	hɔk m̩ hɔk	hɔm hɔk	hɔk mɔk
鹹唔鹹	salty	ham m̩ ham	ham ham	ham mam
謙唔謙	modest	him m̩ him	him him	him mim

勸唔勸	convince	hyn m̩ hyn	hym hyn	hyn myn
慳唔慳	frugal	han m̩ han	ham han	han man
痕唔痕	itchy	hən m̩ hən	həm hən	hən mən
寒唔寒	chilly	hɔn m̩ hɔn	hɔm hɔn	hɔn mɔn
肯唔肯	willing	həŋ m̩ həŋ	həm həŋ	həŋ məŋ
輕唔輕	light	heŋ m̩ heŋ	hem heŋ	heŋ meŋ
興唔興	popular	heŋ m̩ heŋ	hem heŋ	heŋ meŋ
紅唔紅	red	hoŋ m̩ hoŋ	hom hoŋ	hoŋ moŋ
香唔香	fragrant	hœŋ m̩ hœŋ	hœm hœŋ	hœŋ mœŋ

Syllables with the glottal fricative [h] as onset have the choice between σ_1 -m̩²¹ and m̩²¹- σ_2 contraction, depending on speech tempo. In m̩²¹- σ_2 contraction, which occurs in a faster speech tempo, the syllabic nasal /m̩/ is resyllabified as the onset of the following syllable to replace [h] of the original syllable. It not only involves the reduction of /m̩/ into a non-syllabic [m], but it also involves the deletion of a segment [h].

3.1.1.2.2 *The glottal stop [ʔ]*

The glottal stop [ʔ] is not phonemic in Cantonese. Yip (1993) claims that the onsets [ʔ] and [ŋ], which are in free variation, are derived from underlyingly onsetless syllables. When an onsetless syllable has a [-high, +back] vowel as the nucleus, either [ʔ] or [ŋ] is inserted to occupy the onset position to fulfill onset realization.

(22) [ʔ] ~ [ŋ] free variation in Cantonese (Yip 1993:3)

<u>Underlying form</u>	<u>Surface form</u>
/am/	[ʔam]
	[ŋam] (fading out)

The choice between [ʔ] and [ŋ] is not constrained by any phonological environment, but is rather attributed to various sociolinguistic and historical factors (Bourgerie 1980). [ŋ] is gradually fading out while [ʔ] is used more often by the young generation. The detailed historical explanation will not be given in this section. The focus of the discussion is the behavior of [ʔ] as an epenthetic onset in syllable contraction. The last column of the following table presents the results of m^{21} - σ_2 contraction when [ʔ] is involved.

(23) When σ_2 has a null onset \emptyset which is realized as [ʔ]

Chinese Char.	English gloss (X-or-not)	Citation	σ_1 - m^{21} contraction (slower)	m^{21} - σ_2 contraction (faster)
餓唔餓	hungry	ɔː m ɔː	ʔɔm ʔɔː	ʔɔː mɔː
矮唔矮	short	ɛj m ɛj	ʔɛm ʔɛj	ʔɛj mɛj
愛唔愛	love	ɔj m ɔj	ʔɔm ʔɔj	ʔɔj mɔj
噏唔噏	utter	ɛp m ɛp	ʔɛm ʔɛp	ʔɛp mɛp
押唔押	catch	at m at	ʔam ʔat	ʔat mat
壓唔壓	stink	at m at	ʔam ʔat	ʔat mat
惡唔惡	fierce	ɔk m ɔk	ʔɔm ʔɔk	ʔɔk mɔk
啱唔啱	correct	am m am	ʔam ʔam	ʔam mam
暗唔暗	dim	ɛm m ɛm	ʔɛm ʔɛm	ʔɛm mɛm
晏唔晏	late	an m an	ʔam ʔan	ʔan man

The behavior of the glottal stop [ʔ] in σ_1 - m^{21} - σ_2 syllable contraction is similar to that of the glottal fricative [h] in (21). With a slower speech tempo, /m/ becomes the [-m], the coda of σ_1 . With a faster speech tempo, /m/ becomes [m-], the onset of σ_2 .

3.1.2 *Tonal issues*

Having examined the patterns of syllable contraction on the segmental level, I bring tone into discussion in this section. In connected speech, the syllabic nasal /m̥²¹/ often loses its status as the nucleus of a syllable. Segmentally, the labial nasal either attaches to σ_1 or σ_2 . Hence, what is the behavior of tone, which is a suprasegmental feature? Where does the tone go after syllable contraction? In this chapter, I first describe tonal data with Chao's (1986) system so as to draw generalizations. In the next chapter, I will account for these generalizations by a feature system.

3.1.2.1 σ_1 -m̥²¹ contraction

When /m̥²¹/ fuses with its preceding syllable and is realized as a coda, its low falling tone contour is always attached to σ_1 . The tone melodies of σ_1 and /m̥²¹/ always fuse together and are both realized in the contracted syllable. Deletion of the low falling tone in the output is prohibited. This phenomenon is consistent in all cases of σ_1 -m̥²¹ contraction. (24) presents the behavior of all six citation tones respectively in σ_1 -m̥²¹ contraction. All examples demand the preservation of the low falling tone of /m̥²¹/ and are against the deletion of tone

21:

(24) Tonal behavior during σ_1 - m^{21} contraction

Chinese Char.	English gloss (X-or-not)	Citation	$[\sigma+m]^{x+21} \sigma^{55}$	$[\sigma+m]^x \sigma^x$
醫唔醫	cure	ji: ⁵⁵ m̄ ²¹ ji: ⁵⁵	jim ⁵¹ ji: ⁵⁵	*jim ⁵⁵ ji: ⁵⁵
包唔包	wrap	paw ⁵⁵ m̄ ²¹ paw ⁵⁵	pam ⁵¹ paw ⁵⁵	*pam ⁵⁵ paw ⁵⁵
煲唔煲	cook	pow ⁵⁵ m̄ ²¹ pow ⁵⁵	pom ⁵¹ pow ⁵⁵	*pom ⁵⁵ pow ⁵⁵
咳唔咳	cough	k ^h et ⁵ m̄ ²¹ k ^h et ⁵	k ^h em ⁵¹ k ^h et ⁵	*k ^h em ⁵⁵ k ^h et ⁵
得唔得	able	tək ⁵ m̄ ²¹ tək ⁵	tem ⁵¹ tək ⁵	*tem ⁵⁵ tək ⁵
識唔識	know	sek ⁵ m̄ ²¹ sek ⁵	sem ⁵¹ sek ⁵	*sem ⁵⁵ sek ⁵
尖唔尖	pointed	tsim ⁵ m̄ ²¹ tsim ⁵	tsim ⁵¹ tsim ⁵⁵	*tsim ⁵⁵ tsim ⁵⁵
深唔深	difficult	səm ⁵⁵ m̄ ²¹ səm ⁵⁵	səm ⁵¹ səm ⁵⁵	*səm ⁵⁵ səm ⁵⁵
吞唔吞	swallow	t ^h en ⁵⁵ m̄ ²¹ t ^h en ⁵⁵	t ^h em ⁵¹ t ^h en ⁵⁵	*t ^h em ⁵⁵ t ^h en ⁵⁵
幫唔幫	help	pəŋ ⁵⁵ m̄ ²¹ pəŋ ⁵⁵	pəm ⁵¹ pəŋ ⁵⁵	*pəm ⁵⁵ pəŋ ⁵⁵
苦唔苦	bitter	fu: ³⁵ m̄ ²¹ fu: ³⁵	fum ³⁵¹ fu: ³⁵	*fum ³⁵ fu: ³⁵
打唔打	beat	ta: ³⁵ m̄ ²¹ ta: ³⁵	tam ³⁵¹ ta: ³⁵	*tam ³⁵ ta: ³⁵
紫唔紫	purple	tsi: ³⁵ m̄ ²¹ tsi: ³⁵	tsim ³⁵¹ tsi: ³⁵	*tsim ³⁵ tsi: ³⁵
飽唔飽	full	paw ³⁵ m̄ ²¹ paw ³⁵	pam ³⁵¹ paw ³⁵	*pam ³⁵ paw ³⁵
睇唔睇	look at	t ^h ej ³⁵ m̄ ²¹ t ^h ej ³⁵	t ^h em ³⁵¹ t ^h ej ³⁵	*t ^h em ³⁵ t ^h ej ³⁵
醜唔醜	ugly	ts ^h ew ³⁵ m̄ ²¹ ts ^h ew ³⁵	ts ^h em ³⁵¹ ts ^h ew ³⁵	*ts ^h em ³⁵ ts ^h ew ³⁵
洗唔洗	wash	sej ³⁵ m̄ ²¹ sej ³⁵	səm ³⁵¹ sej ³⁵	*səm ³⁵ sej ³⁵
搞唔搞	deal with	kaw ³⁵ m̄ ²¹ kaw ³⁵	kam ³⁵¹ kaw ³⁵	*kam ³⁵ kaw ³⁵
飲唔飲	drink	jəm ³⁵ m̄ ²¹ jəm ³⁵	jəm ³⁵¹ jəm ³⁵	*jəm ³⁵ jəm ³⁵
搵唔搵	look for	wen ³⁵ m̄ ²¹ wen ³⁵	wem ³⁵¹ wen ³⁵	*wem ³⁵ wen ³⁵
懵唔懵	stupid	moŋ ³⁵ m̄ ²¹ moŋ ³⁵	mom ³⁵¹ moŋ ³⁵	*mom ³⁵ moŋ ³⁵
頂唔頂	bear	teŋ ³⁵ m̄ ²¹ teŋ ³⁵	tem ³⁵¹ teŋ ³⁵	*tem ³⁵ teŋ ³⁵
想唔想	want	sœŋ ³⁵ m̄ ²¹ sœŋ ³⁵	sœm ³⁵¹ sœŋ ³⁵	*sœm ³⁵ sœŋ ³⁵
試唔試	try	si: ³³ m̄ ²¹ si: ³³	sim ³¹ si: ³³	*sim ³³ si: ³³
怕唔怕	scared of	p ^h a: ³³ m̄ ²¹ p ^h a: ³³	p ^h am ³¹ p ^h a: ³³	*p ^h am ³³ p ^h a: ³³
快唔快	quick	faj ³³ m̄ ²¹ faj ³³	fam ³¹ faj ³³	*fam ³³ faj ³³
跳唔跳	jump	t ^h iw ³³ m̄ ²¹ t ^h iw ³³	t ^h im ³¹ t ^h iw ³³	*t ^h im ³³ t ^h iw ³³
爆唔爆	explode	paw ³³ m̄ ²¹ paw ³³	pam ³¹ paw ³³	*pam ³³ paw ³³
告唔告	sue	kow ³³ m̄ ²¹ kow ³³	kom ³¹ kow ³³	*kom ³³ kow ³³

澀唔澀	bitter	kip ³ m̩ ²¹ kip ³	kim ³¹ kip ³	*kim ³³ kip ³
裂唔裂	crack	lit ³ m̩ ²¹ lit ³	lim ³¹ lit ³	*lim ³³ lit ³
殺唔殺	kill	sat ³ m̩ ²¹ sat ³	sam ³¹ sat ³	*sam ³³ sat ³
算唔算	count	syn ³³ m̩ ²¹ syn ³³	sym ³¹ syn ³³	*sym ³³ syn ³³
送唔送	give as a gift	soŋ ³³ m̩ ²¹ soŋ ³³	som ³¹ soŋ ³³	*som ³³ soŋ ³³
移唔移	move	ji: ²¹ m̩ ²¹ ji: ²¹	jim ²¹ ji ²¹	jim ²¹ ji ²¹
爬唔爬	crawl	p ^h a: ²¹ m̩ ²¹ p ^h a: ²¹	p ^h am ²¹ p ^h a: ²¹	p ^h am ²¹ p ^h a: ²¹
肥唔肥	fat	fej ²¹ m̩ ²¹ fej ²¹	fem ²¹ fej ²¹	fem ²¹ fej ²¹
流唔流	flow	lew ²¹ m̩ ²¹ lew ²¹	lɛm ²¹ lew ²¹	lɛm ²¹ lew ²¹
嘈唔嘈	noisy	ts ^h ow ²¹ m̩ ²¹ ts ^h ow ²¹	ts ^h om ²¹ ts ^h ow ²¹	ts ^h om ²¹ ts ^h ow ²¹
危唔危	dangerous	ŋej ²¹ m̩ ²¹ ŋej ²¹	ŋem ²¹ ŋej ²¹	ŋem ²¹ ŋej ²¹
甜唔甜	sweet	t ^h im ²¹ m̩ ²¹ t ^h im ²¹	t ^h im ²¹ t ^h im ²¹	t ^h im ²¹ t ^h im ²¹
淫唔淫	erotic	jɛm ²¹ m̩ ²¹ jɛm ²¹	jɛm ²¹ jɛm ²¹	jɛm ²¹ jɛm ²¹
難唔難	difficult	lan ²¹ m̩ ²¹ lan ²¹	lam ²¹ lan ²¹	lam ²¹ lan ²¹
殘唔殘	worn out	ts ^h an ²¹ m̩ ²¹ ts ^h an ²¹	ts ^h am ²¹ ts ^h an ²¹	ts ^h am ²¹ ts ^h an ²¹
圓唔圓	round	jyn ²¹ m̩ ²¹ jyn ²¹	jym ²¹ jyn ²¹	jym ²¹ jyn ²¹
還唔還	return	wan ²¹ m̩ ²¹ wan ²¹	wam ²¹ wan	wam ²¹ wan
明唔明	understand	mej ²¹ m̩ ²¹ mej ²¹	mem ²¹ mej ²¹	mem ²¹ mej ²¹
贏唔贏	win	jɛŋ ²¹ m̩ ²¹ jɛŋ ²¹	jɛm ²¹ jɛŋ ²¹	jɛm ²¹ jɛŋ ²¹
惹唔惹	irritate	jɛ: ¹³ m̩ ²¹ jɛ: ¹³	jɛm ¹³¹ jɛ: ¹³	*jɛm ¹³ jɛ: ¹³
坐唔坐	sit	ts ^h ɔ: ¹³ m̩ ²¹ ts ^h ɔ: ¹³	ts ^h ɔm ¹³¹ ts ^h ɔ: ¹³	*ts ^h ɔm ¹³ ts ^h ɔ: ¹³
買唔買	buy	maj ¹³ m̩ ²¹ maj ¹³	mam ¹³¹ maj ¹³	*mam ¹³ maj ¹³
老唔老	old	low ¹³ m̩ ²¹ low ¹³	lom ¹³¹ low ¹³	*lom ¹³ low ¹³
企唔企	stand	k ^h ej ¹³ m̩ ²¹ k ^h ej ¹³	k ^h em ¹³¹ k ^h ej ¹³	*k ^h em ¹³ k ^h ej ¹³
斷唔斷	disconnect	t ^h yn ¹³ m̩ ²¹ t ^h yn ¹³	t ^h ym ¹³¹ t ^h yn ¹³	*t ^h ym ¹³ t ^h yn ¹³
懶唔懶	lazy	lan ¹³ m̩ ²¹ lan ¹³	lam ¹³¹ lan ¹³	*lam ¹³ lan ¹³
軟唔軟	soft	jyn ¹³ m̩ ²¹ jyn ¹³	jym ¹³¹ jyn ¹³	*jym ¹³ jyn ¹³
近唔近	close	k ^h ɛn ¹³ m̩ ²¹ k ^h ɛn ¹³	k ^h ɛm ¹³¹ k ^h ɛn ¹³	*k ^h ɛm ¹³ k ^h ɛn ¹³
上唔上	go up	sœŋ ¹³ m̩ ²¹ sœŋ ¹³	sœm ¹³¹ sœŋ ¹³	*sœm ¹³ sœŋ ¹³
勇唔勇	courageous	joŋ ¹³ m̩ ²¹ joŋ ¹³	jom ¹³¹ joŋ ¹³	*jom ¹³ joŋ ¹³
入唔入	enter	jɛp ² m̩ ²¹ jɛp ²	jɛm ²¹ jɛp ²	*jɛm ²² jɛp ²
密唔密	dense	mɛt ² m̩ ²¹ mɛt ²	mɛm ²¹ mɛt ²	*mɛm ²² mɛt ²

度唔度	measure	tək ² m̩ ²¹ tək ²	təm ²¹ tək ²	*təm ²² tək ²
直唔直	straight	tsek ² m̩ ²¹ tsek ²	tsem ²¹ tsek ²	*tsem ²² tsek ²
食唔食	eat	sek ² m̩ ²¹ sek ²	sem ²¹ sek ²	*sem ²² sek ²
悶唔悶	boring	mun ²² m̩ ²¹ mun ²²	mum ²¹ mun ²²	*mum ²² mu:n ²²
爛唔爛	worn out	lan ²² m̩ ²¹ lan ²²	lam ²¹ lan ²²	*lam ²² lan ²²
磅唔磅	weigh	pəŋ ²² m̩ ²¹ pəŋ ²²	pəm ²¹ pəŋ ²²	*pəm ²² pəŋ ²²
望唔望	look at	məŋ ²² m̩ ²¹ məŋ ²²	məm ²¹ məŋ ²²	*məm ²² məŋ ²²
定唔定	stable	teŋ ²² m̩ ²¹ teŋ ²²	tem ²¹ teŋ ²²	*tem ²² teŋ ²²
認唔認	admit	jeŋ ²² m̩ ²¹ jeŋ ²²	jem ²¹ jeŋ ²²	*jem ²² jeŋ ²²
大唔大	big	taɿ ²² m̩ ²¹ taɿ ²²	tan ²¹ taɿ ²²	*tan ²² taɿ ²²
受唔受	accept	səw ²² m̩ ²¹ səw ²²	səm ²¹ səw ²²	*səm ²² səw ²²
夜唔夜	late	jɛ: ²² m̩ ²¹ jɛ: ²²	jɛm ²¹ jɛ: ²²	*jɛm ²² jɛ: ²²

The erasure of the low falling tone is represented by the last column of (24).

The results are illegal. The second last column represents the preservation of the low falling contour after syllable contraction. Hence we can draw the generalization that in $\sigma_1\text{-m}^{21}$ contraction in which the syllabic labial nasal is realized as a coda, the low falling tone is always partially realized on the contracted syllable. This generalization is summarized in (25):

(25) Summary of tonal behavior in $\sigma_1\text{-m}^{21}$ contraction

Tone of σ_1	Tone of /m ²¹ /	Tone of contracted syllable $\sigma[\sigma_1+m]$
55	21	51 ⁴
35	21	351 ⁵
33	21	31
21	21	21
13	21	131
22	21	21

⁴ In fact, the result of 55+21 could be represented as 52 or 53 since either of them is able to represent a high falling tone. The resulted tone contour is not necessarily as steep as 51. The exact pitch has to be concluded by phonetic study, which is not the aim of this investigation. I put it as 51 so as to show the edge-in effect after syllable contraction.

⁵ The result of 35+21 is logically 3521. I put it as 351 because when the tone goes from 5 to 1, it must go through 2 anyway. Therefore 3521 and 351 actually represent the same contour.

When a syllable with high level tone 55 contracts with /m²¹/, it results in a high falling tone. When a syllable with high rising tone 35 contracts with /m²¹/, it results in a complex tone 351 with a high rising contour followed by high falling. For the mid level tone, the contracted syllable bears a mid falling tone. Syllables with the low falling tone 21 share the same tone as /m²¹/.

The products of syllable contraction also bears a low falling tone. When a syllable with a low rising tone 13 contracts with /m²¹/, the resulting tone has a complex contour 131 which is first low rising followed by a falling contour. Whereas for the low level tone 22, the product of syllable contraction bears a low falling tone 21.

3.1.2.2 m²¹-σ₂ contraction

Contrary to σ₁-m²¹ contraction, when /m²¹/ is realized as the onset of σ₂, the low falling tone is always erased from the output. This is illustrated by the last column of (26):

(26) Tonal behavior in m²¹-σ₂ contraction

Chinese Characters	English gloss (X-or-not)	Citation	σ ^x [m+σ] ^{21+x}	σ ^x [m+σ] ^x
開唔開	ppen	hɔj ⁵⁵ m ²¹ hɔj ⁵⁵	*hɔj ⁵⁵ mɔj ²¹⁵	hɔj ⁵⁵ mɔj ⁵⁵
香唔香	fragrant	hœŋ ⁵⁵ m ²¹ hœŋ ⁵⁵	*hœŋ ⁵⁵ mœŋ ²¹⁵	hœŋ ⁵⁵ mœŋ ⁵⁵
啱唔啱	correct	am ⁵⁵ m ²¹ am ⁵⁵	*ʔam ⁵⁵ mam ²¹⁵	ʔam ⁵⁵ mam ⁵⁵
噏唔噏	utter	ɛp ⁵ m ²¹ ɛp ⁵	*ʔɛp ⁵ mɛp ²¹⁵	ʔɛp ⁵ mɛp ⁵
黑唔黑	dark	hɛk ⁵ m ²¹ hɛk ⁵	*hɛk ⁵ mɛk ²¹⁵	hɛk ⁵ mɛk ⁵
可唔可	able	hɔ: ³⁵ m ²¹ hɔ: ³⁵	*hɔ: ³⁵ mɔ: ²¹⁵	hɔ: ³⁵ mɔ: ³⁵
好唔好	good	how ³⁵ m ²¹ how ³⁵	*how ³⁵ mow ²¹⁵	how ³⁵ mow ³⁵

考唔考	take a test	haw ³⁵ m̩ ²¹ haw ³⁵	*haw ³⁵ maw ²¹⁵	haw ³⁵ maw ³⁵
肯唔肯	willing	həŋ ³⁵ m̩ ²¹ həŋ ³⁵	*həŋ ³⁵ məŋ ²¹⁵	həŋ ³⁵ məŋ ³⁵
矮唔矮	short	ɛj ³⁵ m̩ ²¹ ɛj ³⁵	*ʔɛj ³⁵ məj ²¹⁵	ʔɛj ³⁵ məj ³⁵
去唔去	go	həŋ ³³ m̩ ²¹ həŋ ³³	*həŋ ³³ məŋ ²¹³	həŋ ³³ məŋ ³³
勸唔勸	convince	hyn ³³ m̩ ²¹ hyn ³³	*hyn ³³ myn ²¹³	hyn ³³ myn ³³
暗唔暗	dim	ɛm ³³ m̩ ²¹ ɛm ³³	*ʔɛm ³³ məm ²¹³	ʔɛm ³³ məm ³³
愛唔愛	love	ɔj ³³ m̩ ²¹ ɔj ³³	*ʔɔj ³³ məj ²¹³	ʔɔj ³³ məj ³³
壓唔壓	stink	at ³ m̩ ²¹ at ³	*ʔat ³ mat ²¹³	ʔat ³ mat ³
惡唔惡	fierce	ɔk ³ m̩ ²¹ ɔk ³	*ʔɔk ³ mək ²¹³	ʔɔk ³ mək ³
嚇唔嚇	frighten	hak ³ m̩ ²¹ hak ³	*hak ³ mak ²¹³	hak ³ mak ³
係唔係	be	həj ²² m̩ ²¹ həj ²²	*həj ²² məj ²¹²	həj ²² məj ²²
餓唔餓	hungry	ɔ: ²² m̩ ²¹ ɔ: ²²	*ʔɔ: ²² mə: ²¹²	ʔɔ: ²² mə: ²²
合唔合	match	həp ² m̩ ²¹ həp ²	*həp ² məp ²¹²	həp ² məp ²
學唔學	learn	hɔk ² m̩ ²¹ hɔk ²	*hɔk ² mək ²¹²	hɔk ² mək ²

When the syllabic nasal /m̩²¹/ is realized as the onset of the following syllable, there is consistently no trace of the low falling tone in the contracted syllable. The following table summarizes tonal behavior in the two types of syllable contractions.

(27) Summary of the asymmetrical tonal behavior between different types of contraction

Type of contraction	/m̩ ²¹ / becomes	Tone 21 preserved?
σ ₁ -m̩ ²¹	coda of σ ₁	YES
m̩ ²¹ -σ ₂	onset of σ ₂	NO

(27) generalizes that when /m̩²¹/ is realized as a coda, its tone melody must be preserved; whereas when it is realized as an onset, its tone melody is lost. In other words, while /m̩²¹/ is realized as a different constituent in the syllable, its tone bearing ability also differs.

3.1.3 Summary of the $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ string

In this section, a number of generalizations are drawn. First, it is very consistent that $/\mathfrak{m}^{21}/$ is realized as a bilabial consonant [m], but it is never reduced further into a nasal feature, or even completely deleted; nor is it assimilated to the place feature of surrounding syllables. Its labial feature and its status as a segment do not change.

$\sigma_1\text{-}\mathfrak{m}^{21}$ contraction occurs to all syllable types with all types of onsets. When $/\mathfrak{m}^{21}/$ is contracted with an open syllable or a syllable with an offglide, it is realized as the coda of σ_1 . When $/\mathfrak{m}^{21}/$ is contracted with a checked syllable, the original voiceless oral stop coda is deleted and replaced by [-m]. When $/\mathfrak{m}^{21}/$ contracts with a syllable that has a nasal coda, it is realized as a coda [-m] and replaces the nasal coda of the original syllable.

$\mathfrak{m}^{21}\text{-}\sigma_2$ contraction is limited to glottal or null onsets. When $/\mathfrak{m}^{21}/$ is contracted with a syllable with [h] as the onset, [h] is replaced by [m-]. When $/\mathfrak{m}^{21}/$ is contracted with an onsetless syllable, it is realized as the onset of σ_2 .

Tonal behavior is different between $\sigma_1\text{-}\mathfrak{m}^{21}$ and $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction. The low falling contour 21 is always realized on the product of $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction. However, in $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction, in which $/\mathfrak{m}^{21}/$ is realized as an onset [m-], tone 21 is erased.

3.2 The $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ string

Contrary to the $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ string, the pattern of syllable contraction creates a different picture when $/\mathfrak{m}^{21}/$ is sandwiched between two identical disyllabic adjectives or verbs. The following table (28) draws a comparison between the behavior of $/\mathfrak{m}^{21}/$ in a $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ string and that of a $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ string. The first and second columns of (28) present items that undergo legal $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction when they are in a $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ string. Each item is juxtaposed to a $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ string which contains a disyllabic adjective or verb. In each pair of different strings, the syllable preceding $/\mathfrak{m}^{21}/$ is the same. For example, in the first pair, namely $/\text{tsip } \mathfrak{m} \text{ tsip}/$ and $/\text{sej } \text{tsip } \mathfrak{m} \text{ sej } \text{tsip}/$, $/\mathfrak{m}^{21}/$ is preceded by $/\text{tsip}/$ in both strings. The last column is the result of contraction of $/\mathfrak{m}^{21}/$ with its preceding syllable.

(28) Illegal syllable contraction in a $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ string

Chin Char.	Citation form of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$	Contract. with the syllable preceding $/\mathfrak{m}^{21}/$	Chin. Char.	Citation form of $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$	Contraction with the syllable preceding $/\mathfrak{m}^{21}/$
When the syllable preceding $/\mathfrak{m}^{21}/$ has an oral stop coda					
接唔接	tsip \mathfrak{m} tsip	tsim tsip	承接唔承接	sej tsip \mathfrak{m} sej tsip	*sej tsim sej tsip
入唔入	jəp \mathfrak{m} jəp	jəm jəp	進入唔進入	tsən jəp \mathfrak{m} tsən jəp	*tsən jəm tsən jəp
濕唔濕	səp \mathfrak{m} səp	səm səp	潮濕唔潮濕	ts ^h iw səp \mathfrak{m} ts ^h iw səp	*ts ^h iw səm ts ^h iw səp
急唔急	kəp \mathfrak{m} kəp	kəm kəp	焦急唔焦急	tsiw kəp \mathfrak{m} tsiw kəp	*tsiw kəm tsiw kəp
澀唔澀	kip \mathfrak{m} kip	kim kip	苦澀唔苦澀	fu: kip \mathfrak{m} fu: kip	*fu: kim fu: kip
密唔密	met \mathfrak{m} met	məm met	細密唔細密	sej met \mathfrak{m} sej met	*sej məm sej met

發唔發	fat mə fat	fam fat	揮發唔揮發	fej fat mə fej fat	*fej fam fej fat
闊唔闊	fut mə fut	fum fut	遼闊唔遼闊	liw fut mə liw fut	*liw fum liw fut
辣唔辣	lat mə lat	lam lat	潑辣唔潑辣	p ^h ut lat mə p ^h ut lat	*p ^h ut lam p ^h ut lat
裂唔裂	lit mə lit	lim lit	龜裂唔龜裂	k ^w ej lit mə kw ^w ej lit	*k ^w ej lim kw ^w ej lit
紮唔紮	tsat mə tsat	tsam tsat	結紮唔結紮	kit tsat mə kit tsat	*kit tsam kit tsat
切唔切	ts ^h it mə ts ^h it	ts^him ts ^h it	貼切唔貼切	t ^h ip ts ^h it mə t ^h ip ts ^h it	*t ^h ip ts^him t ^h ip ts ^h it
熱唔熱	jit mə jit	jim jit	酷熱唔酷熱	hok jit mə hok jit	*hok jim hok jit
割唔割	kət mə kət	kəm kət	收割唔收割	səw kət mə səw kət	*səw kəm səw kət
滑唔滑	wat mə wat	wam wat	香滑唔香滑	hœŋ wat mə hœŋ wat	*hœŋ wam hœŋ wat
弱唔弱	jœk mə jœk	jœm jœk	脆弱唔脆弱	ts ^h ej jœk mə ts ^h ej jœk	*ts ^h ej jœm ts ^h ej jœk
白唔白	pak mə pak	pam pak	明白唔明白	meŋ pak mə meŋ pak	*meŋ pam meŋ pak
薄唔薄	pək mə pək	pəm pək	單薄唔單薄	tan pək mə tan pək	*tan pəm tan pək
毒唔毒	tok mə tok	tom tok	惡毒唔惡毒	?ək tok mə ?ək tok	*?ək tom ?ək tok
直唔直	tsek mə tsek	tsem tsek	正直唔正直	tseŋ tsek mə tseŋ tsek	*tseŋ tsem tseŋ tsek
塞唔塞	sək mə sək	səm sək	阻塞唔阻塞	tsɔː sək mə tsɔː sək	*tsɔː səm tsɔː sək
錫唔錫	sek mə sek	sem sek	疼錫唔疼錫	t ^h oŋ sek mə t ^h oŋ sek	*t ^h oŋ sem t ^h oŋ sek
識唔識	sek mə sek	sem sek	認識唔認識	jeŋ sek mə jeŋ sek	*jeŋ sem jeŋ sek
熟唔熟	sok mə sok	som sok	成熟唔成熟	seŋ sok mə seŋ sok	*seŋ som seŋ sok
激唔激	kek mə kek	kem kek	刺激唔刺激	ts ^h iː kek mə ts ^h iː kek	*ts ^h iː kem ts ^h iː kek
焗唔焗	kok mə kok	kom kok	翳焗唔翳焗	?ej kok mə ?ej kok	*?ej kom ?ej kok
When the syllable preceding /m ²¹ / has a nasal coda					
慘唔慘	ts ^h am mə ts ^h am	ts^ham ts ^h am	悽慘唔悽慘	ts ^h ej ts ^h am mə ts ^h ej ts ^h am	*ts ^h ej ts^ham ts ^h ej ts ^h am
厭唔厭	jim mə jim	jim jim	討厭唔討厭	t ^h ow jim mə t ^h ow jim	*t ^h ow jim t ^h ow jim
減唔減	kam mə kam	kam kam	削減唔削減	sœk kam mə sœk kam	*sœk kam sœk kam
蠻唔蠻	man mə man	mam man	刁蠻唔刁蠻	tiw man mə tiw man	*tiw mam tiw man
悶唔悶	mun mə mun	mum mun	鬱悶唔鬱悶	wet mun mə wet mun	*wet mum wet mun
煩唔煩	fan mə fan	fam fan	麻煩唔麻煩	maː fan mə maː fan	*maː fam maː fan
爛唔爛	lan mə lan	lam lan	糜爛唔糜爛	mej lan mə mej lan	*mej lam mej lan
難唔難	lan mə lan	lam lan	困難唔困難	k ^{wh} en lan mə k ^{wh} en lan	*k ^{wh} en lam k ^{wh} en lan
暖唔暖	lyn mə lyn	lym lyn	溫暖唔溫暖	wen lyn mə wen lyn	*wen lym wen lyn
亂唔亂	lyn mə lyn	lym lyn	混亂唔混亂	wen lyn mə wen lyn	*wen lym wen lyn

It is very consistent that syllable contraction is prohibited in all

$\sigma_1\text{-}\sigma_2\text{-}m^{21}\text{-}\sigma_3\text{-}\sigma_4$ strings. The replacement of the original coda by [-m] creates

illegal results. All items on the rightmost column are impermissible. Even though

/m̥²¹/ is preceded by the same syllable in each pair, the σ_1 -m̥²¹- σ_2 and σ_1 - σ_2 -m̥²¹- σ_3 - σ_4 strings show asymmetrical behavior in connected speech. The contraction of two syllables /tsip m̥/ into [tsim] is allowed in σ_1 -m̥²¹- σ_2 but not in the σ_1 - σ_2 -m̥²¹- σ_3 - σ_4 string. It can be inferred that the phonology of syllable contraction does not only concern the two contracted syllables, but it is also subjected to a larger domain on the phrase level. I will further explain this generalization in Chapter 5.

(29) has juxtaposed results of m̥²¹- σ_2 contraction in σ_1 -m̥²¹- σ_2 strings against m̥²¹- σ_3 contraction in a σ_1 - σ_2 -m̥²¹- σ_3 - σ_4 string. In each pair, the syllable following /m̥²¹/ is the same. For example, in the pair /hɔj m̥ hɔj/ and /hɔj lɔŋ m̥ hɔj lɔŋ/, /m̥²¹/ is followed by the same syllable /hɔj/.

(29) Illegal syllable contraction in a σ_1 - σ_2 -m̥²¹- σ_3 - σ_4 string

Chin Char.	Citation form of σ_1 -m̥ ²¹ - σ_2	Contraction with the syllable following [m̥ ²¹]	Chin. Char.	Citation form of σ_1 - σ_2 -m̥ ²¹ - σ_3 - σ_4	Contraction with the syllable following [m̥ ²¹]
開唔開	hɔj m̥ hɔj	hɔj mɔj	開朗唔開朗	hɔj lɔŋ m̥ hɔj lɔŋ	*hɔj lɔŋ mɔj lɔŋ
慳唔慳	han m̥ han	han man	慳儉唔慳儉	han kim m̥ han kim	*han kim man kim
香唔香	hœŋ m̥ hœŋ	hœŋ mœŋ	香甜唔香甜	hœŋ t ^h im m̥ hœŋ t ^h im	*hœŋ t ^h im mœŋ t ^h im
可唔可	hɔ: m̥ hɔ:	hɔ: mɔ:	可以唔可以	hɔ: ji: m̥ hɔ: ji:	*hɔ: ji: mɔ: ji:
𠵼唔𠵼	ɐn m̥ ɐn	ʔɐn mɛn	𠵼皮唔𠵼皮	ɐn pei m̥ ɐn pei	*ʔɐn pei mɛn pei

Similar to (28), m̥²¹- σ_3 contraction is prohibited in all σ_1 - σ_2 -m̥²¹- σ_3 - σ_4 strings. The contraction of the two syllables /m̥ hɔj/ into [mɔj] is allowed in a

$\sigma_1\text{-m}^{21}\text{-}\sigma_2$ string but not a $\sigma_1\text{-}\sigma_2\text{-m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ one. To sum up, in Cantonese connected speech, syllable contraction is prohibited in all $\sigma_1\text{-}\sigma_2\text{-m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ strings

3.3 The $\sigma_1\text{-m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ string

The following table (30) presents the segmental patterns in $\sigma_1\text{-m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ strings. The fourth column has listed the results of contraction between /m/ and its preceding syllable; whereas the last column concerns contraction with its following syllable.

(30) Syllable contraction in a $\sigma_1\text{-m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ string

Chinese Character	English gloss (X-or-not)	Citation	$\sigma_1\text{-m}^{21}$ contraction	$\text{m}^{21}\text{-}\sigma_2$ contraction
Open syllables				
苦唔苦澀	bitter	fu: m fu: kip	fum fu: kip	*fu: mu: kip
移唔移動	move	ji: m ji: toŋ	jim ji: toŋ	*jim mi: toŋ
誇唔誇張	exaggerated	k^{wh}a: m k ^{wh} a: tsœŋ	k^{wh}am k ^{wh} a: tsœŋ	*k ^{wh} a: ma: tsœŋ
Offglides				
睇唔睇見	look at	t ^h ej m t ^h ej kin	t ^h em t ^h ej kin	*t ^h ej mej kin
記唔記錄	record	kej m kej lok	kem kej lok	*kej mej lok
追唔追求	purse	tsœŋ m tsœŋ kœu	tsœm tsœŋ kœu	*tsœŋ mœŋ kœu
Oral stop coda				
濕唔濕滯	unlucky	sœp m sœp tsəj	sœm sœp tsəj	*sœp mœp tsəj
割唔割裂	cut	kœt m kœt lit	kœm kœt lit	*kœt mœt lit
激唔激烈	violent	kek m kek lit	kem kek lit	*kek mek lit
Nasal coda				
忍唔忍耐	tolerate	jœn m jœn lœj	jœm jœn lœj	*jœn mœn lœj
幫唔幫忙	help	pœŋ m pœŋ mœŋ	pœm pœŋ mœŋ	*pœŋ mœŋ mœŋ
Glottal onsets				
開唔開朗	cheerful	hœj m hœj lœŋ	hœm hœj lœŋ	hœj mœj lœŋ
學唔學習	learn	hœk m hœk tsap	hœm hœk tsap	hœk mœk tsap
愛唔愛護	love	œj m œj wu:	œm œj wu:	œj mœj wu:

惡唔惡毒	evil	ɔk m̩ ɔk dok	ʔəm ʔok dok	ʔok mɔk dok
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The $\sigma_1\text{-m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ string behaves in the same way as the $\sigma_1\text{-m}^{21}\text{-}\sigma_2$ string in regard to syllable contraction. First, when /m̩/ contracts with its preceding syllable, it becomes a coda [-m]. The oral stop or nasal coda of the original syllable is deleted. Second, when /m̩/ is followed by a syllable with a glottal consonant, [m-] replaces the original glottal onset. The tonal aspect of syllable contraction is presented in (31):

(31) Tonal behavior in $\sigma_1\text{-m}^{21}$ contraction

Chinese Character	English gloss (X-or-not)	Citation	Attach tone 21 after contraction	Do not attach tone 21 after contraction
追唔追求	purse	tseŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵ kɛw ²¹	tsem ⁵¹	*tsem ⁵⁵
誇唔誇張	exaggerated	k ^{wh} a: ⁵⁵ m̩ ²¹ k ^{wh} a: ⁵⁵ tsœŋ ⁵⁵	k ^{wh} am ⁵¹	*k ^{wh} am ⁵⁵
幫唔幫忙	help	pɔŋ ⁵⁵ m̩ ²¹ pɔŋ ⁵⁵ mɔŋ ²¹	pɔm ⁵¹	*pɔm ⁵⁵
濕唔濕滯	unlucky	sɛp ⁵ m̩ ²¹ sɛp ⁵ tsɛj ²²	sɛm ⁵¹	*sɛm ⁵
激唔激烈	violent	kek ⁵ m̩ ²¹ kek ⁵ lit ²	kem ⁵¹	*kem ⁵
苦唔苦澀	bitter	fu: ³⁵ m̩ ²¹ fu: ³⁵ kip ³	fum ³⁵¹	*fum ³⁵
睇唔睇見	look at	t ^h ɛj ³⁵ m̩ ²¹ t ^h ɛj ³⁵ kin ³³	t ^h ɛm ³⁵¹	*t ^h ɛm ³⁵
忍唔忍耐	tolerate	jɛn ³⁵ m̩ ²¹ jɛn ³⁵ lɔj ²²	jɛm ³⁵¹	*jɛm ³⁵
記唔記錄	record	kej ³³ m̩ ²¹ kej ³³ lok ²	kem ³¹	*kem ³³
愛唔愛護	love	ɔj ³³ m̩ ²¹ ɔj ³³ wu: ²²	ʔəm ³¹	*ʔəm ³³
割唔割裂	cut	kɔt ³ m̩ ²¹ kɔt ³ lit ³	kɔm ³¹	*kɔm ³
移唔移動	move	ji: ²¹ m̩ ²¹ ji: ²¹ toŋ ²²	jim ²¹	jim ²¹

In a $\sigma_1\text{-m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ string, the low falling tone 21 is always attached to the preceding syllable whenever $\sigma_1\text{-m}^{21}$ contraction takes place. This generalization is the same as that in a $\sigma_1\text{-m}^{21}\text{-}\sigma_2$ string. The situation in $m̩^{21}\text{-}\sigma_2$ contraction is presented as follows:

(32) Tonal behavior in m^{21} - σ_2 contraction

Chinese Character	English gloss (X-or-not)	Citation	Attach tone 21 after contraction	Do not attach tone 21 after contraction
開唔開朗	cheerful	hɔj ⁵⁵ m ²¹ hɔj ⁵⁵ lɔŋ ³⁵	*mɔj ²¹⁵	mɔj ⁵⁵
可唔可以	able	hɔ: ³⁵ m ²¹ hɔ: ³⁵ ji: ¹³	*mɔ: ²¹⁵	mɔ: ³⁵
愛唔愛護	love	ɔj ³³ m ²¹ ɔj ³³ wu: ²²	*mɔj ²¹³	mɔj ³³
惡唔惡毒	evil	ɔk ³ m ²¹ ɔk ³ dok ²	*mɔk ²¹³	mɔk ³
呆唔呆滯	idle	ɔj ²¹ m ²¹ ɔj ²¹ tsej ²²	mɔj ²¹	mɔj ²¹
悍唔悍衛	guard	hɔn ¹³ m ²¹ hɔn ¹³ wɛj ²²	*mɔn ²¹³	mɔn ¹³
學唔學習	learn	hɔk ² m ²¹ hɔk ² tsap ²	*mɔk ²¹²	mɔk ²

When / m^{21} / contracts with its following syllable, becoming an onset, the low falling tone 21 is never realized on the contracted syllable. It is also the case for σ_1 - m^{21} - σ_2 strings. Hence, it can be generalized that the patterns of syllable contraction are the same in σ_1 - m^{21} - σ_2 and σ_1 - m^{21} - σ_2 - σ_3 strings, in terms of the segmental and the tonal aspects.

3.4 The m^{21} - σ_1 string

Apart from A-not-A interrogative constructions, the morpheme / m^{21} / is also used in simple negation in the form of a m^{21} - σ_1 string. In this case, / m^{21} / is not sandwiched between two identical syllables. Rather, it is followed by one syllable. In this regard, only data with glottal onsets are taken into account. The following table presents the products of m^{21} - σ_1 contraction in strings of simple negation. For the purpose of comparison, the respective σ_1 - m^{21} - σ_2 string is juxtaposed on

the left columns. In every pair, the syllable following /m²¹/ is the same. For example, in the first pair /hɔj m̩ hɔj/ and /m̩ hɔj/, /m̩/ is followed by the same syllable /hɔj/.

(33) Illegal syllable contraction in a m²¹-σ₁ string

Chin Char.	Citation form of σ ₁ -m ²¹ -σ ₂	Contraction with the syllable following [m ²¹]	Chin Char.	Citation form of m ²¹ -σ ₁	Contraction with the syllable following [m ²¹]
開唔開	hɔj m̩ hɔj	hɔj mɔj	唔開	m̩ hɔj	*mɔj
慳唔慳	han m̩ han	han man	唔慳	m̩ han	*man
香唔香	hœŋ m̩ hœŋ	hœŋ mœŋ	唔香	m̩ hœŋ	*mœŋ
學唔學	hɔk m̩ hɔk	hɔk mɔk	唔學	m̩ hɔk	*mɔk
𠵼唔𠵼	ɛn m̩ ɛn	?ɛn mɛn	唔𠵼	m̩ ɛn	*mɛn
愛唔愛	ɔj m̩ ɔj	?ɔj mɔj	唔愛	m̩ ɔj	*mɔj
惡唔惡	ɔk m̩ ɔk	?ɔk mɔk	唔惡	m̩ ɔk	*mɔk
呆唔呆	ɔj m̩ ɔj	?ɔj mɔj	唔呆	m̩ ɔj	*mɔj

Unlike cases of σ₁-m²¹-σ₂, syllable contraction in simple negation m²¹-σ₁ is strictly prohibited⁶. All the products of syllable contraction on rightmost column are impermissible. It shares the same result with the pentasyllabic interrogative σ₁-σ₂-m²¹-σ₃-σ₄ string.

⁶ There is only one exception to this generalization, which is the contraction of 唔係 /m̩ hɛj/ ‘not-be’ into [mɛj]. I suspect that it is due to its high frequency of use in speech. However, since it is the only exception, I try to exclude any idiosyncratic factors to this generalization.

3.5 *Summary of this chapter*

In this chapter, I have presented the patterns of syllable contraction in various A-not-A strings. First, syllable contraction is permissible in the $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ and $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ strings and they demonstrate a similar pattern in regard to the affected syllables. When $/\mathfrak{m}^{21}/$ contracts with the preceding syllable, it becomes a coda consonant [-m]. The low falling tone 21 is copied to the contracted syllable. When the following consonant is glottal, [m-] replaces the original onset. No tonal melody of $/\mathfrak{m}^{21}/$ is copied to the product of contraction. Since the behavior of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ and $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ are the same, I will give a unified discussion of these two strings in the next chapter. The analysis of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ is also applicable to that of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$.

On the contrary, syllable contraction of any kind is consistently prohibited in the $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ and $\mathfrak{m}^{21}\text{-}\sigma_1$ strings. The asymmetrical behavior of different strings will be discussed from a prosodic perspective in Chapter 5.

CHAPTER 4 CONSTRAINT INTERACTION IN SYLLABLE CONTRACTION

This chapter aims at explaining the generalizations of 3.1 by constraint interaction. It focuses on the non-prosodic aspects of legal syllable contraction. I argue that the segmental and tonal features of a contracted syllable can be predicted by a set of ranked constraints. In Optimality Theory (Prince & Smolensky 1993), language is a system of conflicting universal forces. All languages are governed by a set of universal and violable constraints. Grammars regulate the conflicts between these forces in order to select the optimal output. Language variation is attributed to different ways to resolve conflicts through constraint interaction. In other words, it is the difference of constraint ranking in the hierarchy which causes the difference in the choice of output.

4.1 Basic syllable constraints

In syllable typology, there are languages which do not have syllables with initial vowels (V) or syllables with final consonants ((C)VC). However, there are no languages forbidding syllables with initial consonants or final vowels (CV). (Clements & Keyser 1983:29) In other words, CV is the most unmarked syllable type. Markedness constraints to prohibit the presence of coda and the absence of onset are formulated accordingly (Prince & Smolensky 2004:106).

(34) ONS ‘A syllable must have an onset.’

(35) NO CODA ‘A syllable must not have a coda.’

The nucleus is the peak of sonority in a syllable. From cross-linguistic observations, the onset of a syllable must rise in sonority towards the nucleus, reaching the peak. Coda must then fall in sonority (Kenstowicz 1994). Therefore, a sonorous segment is favored to be a nucleus. According to sonority hierarchy (Goldsmith 1990), vowels are more sonorous than liquids, liquids are more sonorous than nasals, while nasals are more sonorous than fricatives, and stops are the least sonorous. The sonority hierarchy of classes of sounds and the syllable sonority hierarchy can be collapsed into the following constraint hierarchy (McCarthy 2002:22):

- (36) *NUCLEUS/STOP>> *NUCLEUS/FRICATIVE>> *NUCLEUS/NASAL>>
 *NUCLEUS/LIQUID>>*NUCLEUS/VOWEL

‘Vowels are more preferred to occupy the nucleus position than liquids, while liquids are more preferred than nasals; nasals are better nuclei than fricatives, and stops are least preferred to be a nucleus.’

4.2 Avoidance of syllabic nasals through syllable contraction

While Cantonese allows vowels and nasals to occupy the nucleus position¹ in a syllable, vowels are better nuclei than nasals in regard to the sonority sequence. Hence the following markedness constraint acts to avoid syllabic nasals.

- (37) *NUCLEUS/NASAL ‘Against syllabic nasals.’

Evidence from a secret language in Hong Kong Cantonese supports the

¹ In Cantonese, a nasal can be an independent syllable N and occupies the nucleus position. However, the structure CN is not permissible.

claim that a nasal nucleus is less preferred than a vocalic one. In the secret language, syllables are reduplicated with the [s] + rime template (Jernudd & Yue 1995). However, when a syllabic nasal is reduplicated, a vowel replaces the nasal as the nucleus of the output syllable:

你	食	唔	食	煙				
nei ¹³	sik ²²	m̩ ²¹	sik ²²	jin ⁵⁵				
Reduplication: nei ²¹	sei ⁵⁵	sik ²¹	sik ⁵⁵	m̩ ²¹ sa ⁵⁵	sik ²¹	sik ⁵⁵	jin ²¹	sin ⁵⁵
you	smoke	not	smoke	cigarette				
‘Do you smoke?’								
(Jernudd & Yue 1995:159)								

The expected reduplicated form of /m̩²¹/ should be *[m̩²¹ sm̩⁵⁵] as copied from the reduplication template. However, the phonology of this secret language rejects a nasal as the nucleus of the output. The original syllabic nasal is substituted by a vowel [a]. It supports the argument that nasal nuclei are less favorable than vocalic nuclei, and that the violation of *NUCLEUS/NASAL is avoided.

The sonority factor suggests that it is unfavorable for a nasal to occupy a syllable node by itself, it comes to the question where the syllabic nasal has to go. A simple way to avoid a syllabic nasal is to delete it from the output. However, according to the Affix Manifestation Principle (Lin 1993), phonological systems adopt mechanisms to manifest a morpheme overtly. It reflects a tendency of affix preservation, as opposed to affix erasure:

‘Within the limits of universal and language specific constraints, the effect of affixation of a phonologically expressed morpheme is always manifested.’

(Lin 1993:656)

In a $\sigma_1\text{-}\underset{\cdot}{m}^{21}\text{-}\sigma_2$ sequence, the labial syllabic nasal / $\underset{\cdot}{m}^{21}$ / is a lexical morpheme which has to be preserved in the output to realize its lexical content. In OT terms, a faithfulness constraint is at work to prohibit the total deletion of the morpheme / $\underset{\cdot}{m}^{21}$ /, and thus to prohibit null parse:

(38) REALIZE- MORPHEME

‘A morpheme must have some phonological exponent in the output.’

(Walker 2000:86)

(39) Selection of [ts^hi:m ts^hi:] 似唔似 ‘resemble-not-resemble’ as output

Input: ts ^h i: $\underset{\cdot}{m}$ ts ^h i:	*NUCLEUS/NASAL	REALIZE- MORPHEME	NO CODA
a. ts ^h i: $\underset{\cdot}{m}$ ts ^h i: ²	*!		
b. ts ^h i: ts ^h i:		*!	
☞ c. ts ^h i:m ts ^h i:			*

Candidate (39a) is most faithful to the input but it violates the markedness constraint against syllabic nasals. Candidate (39b) is successful in avoiding a syllabic nasal, yet it has deleted the whole morpheme and incurs the violation of REALIZE- MORPHEME. Candidate (39c) violates the markedness constraint against syllable coda, which is ranked lower than other constraints. It is selected as optimal since it is the best compromise between the need to preserve a morpheme and the need to avoid a syllabic nasal.

² A fully faithful output is a possible variant under some circumstances which will be dealt with in Chapter 6. Tableaux in Chapter 4 and 5 are for a normal or faster speech rate in which a speaker does not intend to draw any emphasis.

A morpheme can be preserved as a feature or a segment. In Japanese, a syllabic nasal can be realized as a nasal feature in connected speech. As mentioned in 3.1.1.1.2, Japanese tackles syllabic nasals by vowel nasalization.

While the nasal segment is deleted in the output, its nasal feature is left to attach to the preceding vowel. (Kobayashi 1969)

三悪	/sa ŋ a ku/	[sãaku]
春雲	/ʃu ŋ u ŋ/	[ʃũuŋ]
犬猿	/ke ŋ e ŋ/	[kẽeŋ]
山陰	/sa ŋ i ŋ/	[saĩŋ]

(the syllable boundary is not indicated)

The outputs demonstrate a violation of a markedness constraint militating against nasal vowels. Universally, oral vowels are less marked than nasal vowels. In language typology, a language may have both oral and nasal vowels, but no languages have nasal vowels only. In fact, most languages lack nasal vowels and they have oral vowels only (Maddieson 1984). The marked status of nasal vowels is expressed by (40):

(40) *V_{NASAL} ‘Vowels must not be nasal.’ (Kager 1999:28)

(41) Selection of [ts^hi:m ts^hi:] 似唔似 as optimal candidate

Input: ts ^h i: m ts ^h i:	*NUCLEUS/NASAL	REALIZE-MORPHEME	*V _{NASAL}	NO CODA
a. ts ^h i: m ts ^h i:	*!			
b. ts ^h i: ts ^h i:		*!		
c. ts ^h i:m ts ^h i:				*
d. ts ^h i: ts ^h i:			*!	

(42) Selection of [sãaktu] 三惡 as optimal candidate

Input: sa ŋ a kɯ	*NUCLEUS/NASAL	REALIZE-MORPHEME	NO CODA	*V _{NASAL}
a. sa ŋ a kɯ	*!			
b. sa a kɯ		*!		
c. san a kɯ			*!	
d. sãaktu				*

The case of Japanese is used as a contrast to explain why vowel nasalization is not a legal way to prohibit syllabic nasals in Cantonese connected speech.

Although both languages aim to avoid syllabic nasals, the dominance of *V_{NASAL} over NO CODA in Cantonese renders vowel nasalization impermissible. Candidate (41d) is able to retain the nasal feature of the input morpheme /m²¹/ and avoid a syllabic nasal. However, its violation of a higher ranked *V_{NASAL} disqualifies it as optimal. An alternative option is to resyllabify the nasal as a coda consonant of the preceding syllable as in (41c), the optimal candidate.

Another means to avoid a syllabic nasal is to insert a vowel after the nasal, while the nasal is resyllabified to occupy the onset position. A CV syllable structure is formed. In this syllable, the nucleus position is taken up by an epenthetic vowel, which does not violate *NUCLEUS/NASAL. However, this epenthetic vowel has no correspondents in the input. It is a violation of the following faithfulness constraint:

- (43) DEP-IO
 ‘Output segments must have input correspondents. i.e. No epenthesis.’ (Kager 1999:68)

(44) Selection of [ts^hi:m ts^hi:] 似唔似 as optimal candidate

Input: ts ^h i: m̩ ts ^h i:	*NUCLEUS/NASAL	REALIZE-MORPHEME	*V _{NASAL}	DEP-IO	NO CODA
a. ts ^h i: m̩ ts ^h i:	*!				
b. ts ^h i: ts ^h i:		*!			
c. ts ^h i:m̩ ts ^h i:					*
d. ts ^h i: ma ts ^h i:			*!		
e. ts ^h i: ma ts ^h i:				*!	

Tableau (44) incorporates an additional constraint DEP-IO into tableau (41).

Candidate (44e) does not contain any syllabic nasal or nasal vowel. Neither does it remove the entire morpheme from the output. However, the epenthetic vowel [a] (or any other vowel)³ does not have any correspondent in the input /ts^hi: m̩ ts^hi:/. The violation of the undominated faithfulness constraint DEP-IO disqualifies it from being optimal. Candidate (44c), which violates NO CODA, a constraint of a lower rank, is selected as the optimal output.

The last option to avoid a syllabic nasal is to resyllabify it as the onset of the following syllable i.e. m̩²¹-σ₂ contraction. It is to be discussed in 4.4 which focuses on onset issues.

³ I pick [a] as the epenthetic vowel in this example because [ma] is phonotactically permissible in Cantonese. It eliminates the possibility that the candidate is ruled out by phonotactic constraints rather than DEP-IO.

4.3 Coda issues

As generalized in 3.1, $\sigma_1\text{-m}^{21}$ contraction works via the compression of $/\text{m}^{21}/$ into the coda of the preceding syllable $[-\text{m}]$. Tableau (44) has illustrated a case involving an open syllable σ_1 , which does not have a coda in the input. The labial nasal can take up the coda position in the output without any problem. However, when σ_1 is not an open syllable, the coda position is already occupied in the input. What will happen to the original coda of σ_1 during syllable contraction?

4.3.1 Oral stop coda deletion

Three voiceless oral stops $[\text{p}, \text{t}, \text{k}]$ may occupy the coda position of a syllable in the Cantonese inventory. When σ_1 containing an oral stop coda has to fuse with $/\text{m}^{21}/$, there are several possible solutions, leading to different outputs. For each possibility, I am going to state which constraints it violates. After stating all the possible solutions and their relevant constraints, I am going to rank them in a constraint hierarchy, explaining why a certain solution selects a certain optimal output.

First, the labial nasal may attach to σ_1 , forming a complex coda $[-\text{pm}]$, $[-\text{tm}]$ or $[-\text{km}]$, resulting in CVCC syllable structure as in (45):

(45) When the labial nasal forms a complex coda with its preceding obstruent

Chinese Char.	English gloss (X-or-not)	Citation	Complex coda formation
濕唔濕	wet	səp m̩ səp	*səpm̩ səp
急唔急	hurry	kəp m̩ kəp	*kəpm̩ kəp
闊唔闊	wide	fut m̩ fut	*futm̩ fut
辣唔辣	spicy	lat m̩ lat	*latm̩ lat
滑唔滑	smooth	wat m̩ wat	*watm̩ wat
薄唔薄	thin	pək m̩ pək	*pəkm̩ pək
得唔得	able	tək m̩ tək	*təkm̩ tək
窄唔窄	narrow	tsak m̩ tsak	*tsakm̩ tsak

In typology, if a language has complex codas in the inventory, it also has simple codas. There are no languages which allow complex codas only. Hence, a complex coda is more marked than a simple one. A complex coda violates the following constraint:

(46) *COMPLEX^{COD} ‘Codas are simple.’ (Kager 1999:97)

The second possibility is that the labial nasal assimilates to the place feature of the coda of σ_1 , forming a new coda of the output. The labial nasal is assimilated to the alveolar place of the coda of σ_1 [t], resulting in an alveolar nasal [n]. Similarly, it becomes a velar nasal [ŋ] after assimilation when the coda of σ_1 is a velar stop [k]. In this way, no complex coda is formed. The CVC syllable structure is kept in the output as in the last column of (47):

(47) When the labial nasal is assimilated to the place of the obstruent coda

Chinese Char.	English gloss (X-or-not)	Citation	Progressive assimilation
闊唔闊	wide	fut m̩ fut	*fun fut
辣唔辣	spicy	lat m̩ lat	*lan lat
滑唔滑	smooth	wat m̩ wat	*wan wat
薄唔薄	thin	pək m̩ pək	*pɔŋ pək
得唔得	able	tək m̩ tək	*tɛŋ tək
窄唔窄	narrow	tsak m̩ tsak	*tsaŋ tsak

This proposal violates a faithfulness constraint which requires identity of a place feature between the input and the output. A constraint focusing on place feature acts to ensure that the place of articulation in the input will be kept in the output. In regard to (47), the place feature involved is [labial].

(48) IDENT-IO[Place]

‘The specification for place of articulation of an input segment must be preserved in its output correspondent.’ (Kager 1999:45)

The third possibility is that the obstruent coda of σ_1 is resyllabified as the onset of the output. It fuses with a syllabic nasal which becomes the nucleus of the new syllable. CVC.N is resyllabified into CV.CN. This possibility is indicated by the last column of (49). This proposal violates *NUCLEUS/NASAL since the syllabicity of the nasal is preserved, which contains a marked value.

(49) When the obstruent coda is resyllabified as an onset

Chinese Char. (σ)	English gloss (X-or-not)	Citation	σ[Obstruent + m̩]
濕唔濕	wet	səp m̩ səp	*sɛ pm̩ səp
急唔急	hurry	kɛp m̩ kɛp	*kɛ pm̩ kɛp
闊唔闊	wide	fut m̩ fut	*fu tm̩ fut
辣唔辣	spicy	lat m̩ lat	*la tm̩ lat
滑唔滑	smooth	wat m̩ wat	*wa tm̩ wat
薄唔薄	thin	pɔk m̩ pɔk	*pɔ km̩ pɔk
得唔得	able	tɛk m̩ tɛk	*tɛ km̩ tɛk
窄唔窄	narrow	tsak m̩ tsak	*tsa km̩ tsak

The fourth possibility is that when the obstruent coda and the labial nasal competes to take up the coda position, the oral stop coda [p], [t] or [k] stays and the labial nasal [m] is deleted completely from the output, which is indicated by

(50). This proposal keeps the CVC syllable structure and does not form any complex coda. However, it violates REALIZE- MORPHEME since the labial nasal is a morpheme and its complete deletion implies that a whole morpheme is removed from the output.

(50) When /m̩/ is deleted completely in the output

Chinese Char.	English gloss (X-or-not)	Citation	Deletion of [m̩]
濕唔濕	wet	səp m̩ səp	*səp səp
急唔急	hurry	kɛp m̩ kɛp	*kɛp kɛp
闊唔闊	wide	fut m̩ fut	*fut fut
辣唔辣	spicy	lat m̩ lat	*lat lat
滑唔滑	smooth	wat m̩ wat	*wat wat
薄唔薄	thin	pɔk m̩ pɔk	*pɔk pɔk
得唔得	able	tɛk m̩ tɛk	*tɛk tɛk
窄唔窄	narrow	tsak m̩ tsak	*tsak tsak

The fifth possibility is that [p, t, k] is realized as the coda in the output, while an epenthetic vowel is inserted after the labial nasal, forming a CV syllable. The nasal becomes the onset of the output syllable as demonstrated by the last column of (51). In this way, no complex coda is formed and no consonants are deleted. Nasal nuclei are also avoided.

(51) When a vowel is inserted after the labial nasal

Chinese Char.	English gloss (X-or-not)	Citation	Vowel epenthesis
濕唔濕	wet	səp mə səp	*səp ma səp
急唔急	hurry	kəp mə kəp	*kəp ma kəp
闊唔闊	wide	fut mə fut	*fut ma fut
辣唔辣	spicy	lat mə lat	*lat ma lat
滑唔滑	smooth	wat mə wat	*wat ma wat
薄唔薄	thin	pək mə pək	*pək ma pək
得唔得	able	tək mə tək	*tək ma tək
窄唔窄	narrow	tsak mə tsak	*tsak ma tsak

The output of vowel epenthesis violates DEP-IO which militates against epenthesis. The inserted vowel does not have any correspondent in the input, which is a violation of input-output faithfulness.

The last possibility is that when the labial nasal competes with the oral stop coda to take up the coda position, it stays while the oral stop coda of σ_1 is deleted in the output. This is represented by the last column of (52). In this way, the complex coda is avoided and the CVC syllable is kept. [m] does not lose its labial feature and it is not syllabic either.

(52) When the obstruent coda is deleted from the output

Chinese Char.	English gloss (X-or-not)	Citation	Oral stop coda deletion
濕唔濕	wet	səp mə səp	səm səp
急唔急	hurry	kəp mə kəp	kəm kəp
闊唔闊	wide	fut mə fut	fum fut
辣唔辣	spicy	lat mə lat	lam lat
滑唔滑	smooth	wat mə wat	wam wat
薄唔薄	thin	pək mə pək	pəm pək
得唔得	able	tək mə tək	təm tək
窄唔窄	narrow	tsak mə tsak	tsam tsak

This solution violates a faithfulness constraint which states that every consonant of the input has a correspondent in the output. In other words, it militates against the deletion of a consonant.

(53) MAX-C-IO ‘No consonant deletion.’ (Kager 1999:181)

Having evaluated various logical possibilities, the following constraint hierarchy describes the selection of the optimal output of $\sigma_1\text{-}\eta^{21}$ contraction when an obstruent coda is involved.

(54) Analysis of oral stop coda deletion

Input	Output candidates	*COMPLEX ^{Cod}	*NUCLEUS/NASAL	REALIZE- MORPHEME	IDENT-IO[Place]	DEP-IO	MAX-C-IO
səp m səp 濕唔濕 'wet or not'	a. səpm səp	*!					
	b. sə pm səp		*!				
	c. səp səp			*!			*
	d. səp ma səp					*!	
	e. səm səp						*
lat m lat 辣唔辣 'spicy or not'	a. latm lat	*!					
	b. la tm lat		*!				
	c. lat lat			*!			*
	d. lat ma lat					*!	
	e. lam lat						*
	f. lan lat				*!		*
tək m tək 得唔得 'able or not'	a. tək m tək	*!					
	b. tək m tək		*!				
	c. tək tək			*!			*
	d. tək ma tək					*!	
	e. tək tək						*
	f. tək tək				*!		*

The result of $\sigma_1\text{-m}^{21}$ contraction involving an obstruent coda /p/, /t/, or /k/ is represented in (54). In the constraint hierarchy, all markedness constraints are undominated. Marked structures such as the syllabic nasal and complex coda are prohibited in Cantonese connected speech. All candidates (b) violate *NUCLEUS/NASAL whereas all candidates (a) demonstrate the violation of *COMPLEX^{COD}. On the other hand, faithfulness is not totally sacrificed for unmarked value. Deletion of a morpheme or the labial feature is still strictly prohibited. Candidates (c) and (f) are eliminated due to the fatal violation of REALIZE- MORPHEME and IDENT-IO[Place] respectively. Candidates (d) are the result of epenthesis which violates the undominated faithfulness constraint DEP-IO. As a compromise of the competing forces, the optimal candidates (e) only violate a faithfulness constraint of a lower rank which is MAX-C-IO. In this regard, the principle of preserving phonological contrast is sacrificed to a certain extent. The constraint hierarchy is summarized below:

- (55) *COMPLEX^{COD}, *NUCLEUS/NASAL, REALIZE-MORPHEME, IDENT-IO
[Place], DEP-IO >> MAX-C-IO

4.3.2 Nasal coda

The last column of the following table presents the legal contracted form

when σ_1 has a nasal coda:

(56) When σ_1 has a nasal coda

Chinese Char.	English gloss (X-or-not)	Citation	Contracted form
甜唔甜	sweet	t ^h im m̩ t ^h im	t ^h im t ^h im
飲唔飲	drink	jəm m̩ jəm	jəm jəm
變唔變	change	pin m̩ pin	pim pin
見唔見	see	kin m̩ kin	kim kin
平唔平	cheap	p ^h ɛŋ m̩ p ^h ɛŋ	p ^h ɛm p ^h ɛŋ
黃唔黃	yellow	wɔŋ m̩ wɔŋ	wɔm wɔŋ

(56) shows that when /m̩/ is attached to a syllable with a nasal coda, [-m] always replaces the original nasal coda. The constraint hierarchy (55) is able to explain the selection of optimal output in regard to nasal coda replacement. In other words, the same constraint hierarchy established in the previous section governs the selection of output coda. It is applicable to both an oral stop coda and a nasal coda.

(57) Analysis of nasal coda replacement

Input	Output candidates	*COMPLEX ^{COD}	*NUCLEUS/NASAL	REALIZE-MORPHEME	IDENT-IO [Place]	DEP-IO	MAX-C-IO
pin m̩ pin 變唔變 'change or not'	a. pinm pin	*!					
	b. pi n̩m̩ pin		*!				
	c. pin pin			*!	*		*
	d. pin ma pin					*!	
	e. pim pin						*
p ^h ɛŋ m̩ p ^h ɛŋ 平唔平 'cheap or not'	a. p ^h ɛŋm̩ p ^h ɛŋ	*!					
	b. p ^h ɛ ŋm̩ p ^h ɛŋ		*!				
	c. p ^h ɛŋ p ^h ɛŋ			*!	*		*
	d. p ^h ɛŋ ma p ^h ɛŋ					*!	
	e. p ^h ɛm̩ p ^h ɛŋ						*

The selection of the output coda of syllable contraction is demonstrated in (57). All candidates (a)-(d) incur a fatal violation. Candidates (a) exhibit a complex coda, violating *COMPLEX^{COD}. Candidates (b) keep the syllabicity of the labial nasal in the output, which violates the markedness constraint *NUCLEUS/NASAL. Candidates (c) fail to parse the morpheme /m̩²¹/ or the labial place feature to the output, violating faithfulness. Candidates (d) contain an epenthetic vowel which does not have a correspondent in the input, which is a fatal violation of faithfulness DEP-IO. Candidates (e) win since it only violates MAX-C-IO, the lowest ranked constraint.

4.4 Onset issues

While $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction affects the right edge of σ_1 , $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction deals with the left edge of σ_2 , which is an onset. The discussion of onsets is divided into two parts – first, why is $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction illegal when it comes to non-glottal onsets? Second, why does glottal transparency allow $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction?

4.4.1 Illegal $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction

The first logically possible way of $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction is that $/\mathfrak{m}^{21}/$ forms a complex onset together with the onset of σ_2 . The result of this process is shown in the last column of (58):

(58) When $/\mathfrak{m}^{21}/$ forms a complex onset with the onset of σ_2 (labial, alveolar, palatal or velar)

Chinese Char.	English gloss (X-or-not)	Citation	$\mathfrak{m}^{21}\text{-}\sigma_2$ contraction (Complex onset)
怕唔怕	afraid	$p^h a: \mathfrak{m} p^h a:$	* $p^h a: \mathfrak{m} p^h a:$
多唔多	many	$t\text{:} \mathfrak{m} t\text{:}$	* $t\text{:} \mathfrak{m} t\text{:}$
忍唔忍	tolerate	$j\text{en} \mathfrak{m} j\text{en}$	* $j\text{en} \mathfrak{m} j\text{en}$
割唔割	cut	$k\text{ot} \mathfrak{m} k\text{ot}$	* $k\text{ot} \mathfrak{m} k\text{ot}$

This process violates a markedness constraint against complex onsets. In onset typology, if a language has complex onsets, it also has simple onsets. There are no languages which have complex onsets only. Hence, complex onsets are more marked than simple onsets.

(59) *COMPLEX^{ONS} ‘Onsets are simple.’ (Kager 1999:97)

Another way of having $m^{21}-\sigma_2$ contraction is to delete the original onset of σ_2 and replace it with the labial nasal [m] in the output as shown in the last column of (60):

(60) When [m-] replaces the onset of σ_2 (labial, alveolar, palatal or velar)

Chinese Char.	English gloss (X-or-not)	Citation	$m^{21}-\sigma_2$ (Onset deletion)
怕唔怕	afraid	$p^h a: m p^h a:$	* $p^h a: m a:$
多唔多	many	$t \sigma: m t \sigma:$	* $t \sigma: m \sigma:$
忍唔忍	tolerate	$j \text{en} m j \text{en}$	* $j \text{en} m \text{en}$
割唔割	cut	$k \sigma t m k \sigma t$	* $k \sigma t m \sigma t$

This process violates faithfulness constraint MAX-C-IO which states that an input consonant should be realized in the output. In Cantonese connected speech, both types of $m^{21}-\sigma_2$ contraction are rejected for labial, alveolar, palatal and velar onsets. σ_1-m^{21} contraction is the only legal type of contraction for these onset types.

(61) Selection of [$p^h a: m p^h a:$] 怕唔怕 as optimal candidate

Input: $p^h a: m p^h a:$	*COMPLEX ^{ONS}	*NUCLEUS/NASAL	REALIZE-MORPHEME	MAX-C-IO	No CODA
a. $p^h a: m p^h a:$		*!			
b. $p^h a: m p^h a:$	*!				
c. $p^h a: p^h a:$			*!	*	
d. $p^h a: m a:$				*!	
e. $p^h a: m p^h a:$					*

The above tableau demonstrates the selection of the optimal output when σ_2 has a labial onset. The same constraint hierarchy is also applicable to alveolar, palatal and velar onsets. In Cantonese, the prohibition of consonant deletion and complex onset takes a higher priority over the avoidance of a coda. As a result, m^{21} - σ_2 contraction is rejected.

The syllables in (61) only demonstrates an example of open syllable. However, if the source syllable has a coda, the replacement of [-m] as a coda will equally violate MAX-C-IO, as in m^{21} - σ_2 contraction. It raises a question whether there will be two optimal candidates:

(62) Analysis of /kət m̩ kət/ 割唔割 ‘to cut or not’ (to be revised)

Input: kət m̩ kət	*COMPLEX ^{ONS}	*NUCLEUS/NASAL	REALIZE-MORPHEME	MAX-C-IO	NO CODA
a. kət m̩ kət		*!			**
b. kət mkət	*!				**
c. kət kət			*!	*	**
? [☞] d. kət mət				*	**
? [☞] e. kəm kət				*	**

Both candidates (62d) and (62e) have deleted a consonant in the output.

(62d) deletes the original onset of σ_2 whereas (62e) deletes the original coda of σ_1 .

They both violate MAX-C-IO once. At this point, it seems that both candidates are equally qualified as optimal. However, the consonant they delete actually occupies a different position in a syllable. The onset-coda difference causes different degrees of psycholinguistic consequences. In studies of positional faithfulness, it is indicated that word-initial material plays the most significant role in lexical access, word recognition and speech production (Beckman 1998). Initiality effects in processing have been proven by a lot of psycholinguistic studies. Freedman & Landauer (1966) states that in tip-of-the-tongue states, word onsets are the most effective cues in inducing recall of the target word. Nootboom (1981) finds that utterance-initial portions make better cues for lexical retrieval and word recognition than final or medial portions. Nootboom (1981) also predicts that lexical items carry more information early in the word than late in the word. Seen in this light, it is less common for word-initial phonemes to suffer from assimilation and coarticulation than that of word final phonemes. In regard to the principle of preserving phonological contrast, the faithfulness of the word-initial onset has greater psycholinguistic importance over the faithfulness of word-medial or word-final elements. This is summarized in the following constraint hierarchy:

(63) MAX-C-IO-ONSET >> MAX-C-IO

(64) Selection of [kəm kət] 割唔割 as optimal candidate

Input: kət m̩ kət	*COMPLEX ^{ONS}	*NUCLEUS/NASAL	REALIZE-MORPHEME	MAX-C-IO-ONSET	MAX-C-IO	NO CODA
a. kət m̩ kət		*!				**
b. kət mkət	*!					**
c. kət kət			*!			**
d. kət mət				*!	*	**
e. kəm kət					*	**

The deletion of an onset leads to more perceptual consequences than the deletion of a coda. In other words, the violation of faithfulness to the onset has a higher price to pay than that of the coda, and should be more forcefully avoided. In this regard, candidate (64e) violates the lower ranked constraint MAX-C-IO, and thus it is selected as the optimal output.

4.4.2 Glottal transparency

Both $\sigma_1\text{-m}^{21}$ and $\text{m}^{21}\text{-}\sigma_2$ contraction are legal when the onset of the original syllable is a glottal fricative [h]. When speech tempo is relatively fast, $\text{m}^{21}\text{-}\sigma_2$ contraction is commonly found as indicated in the last column of (65):

(65) When σ has the glottal fricative [h] as the onset

Chinese Char.	English gloss (X-or-not)	Citation	Slower speech tempo: $\sigma_1\text{-m}^{21}$	Faster speech tempo: $\text{m}^{21}\text{-}\sigma_2$
係唔係	be	həj m̩ həj	həm həj	həj məj
開唔開	open	hɔj m̩ hɔj	hɔm hɔj	hɔj mɔj
去唔去	go	həʔ m̩ həʔ	həm həʔ	həʔ məʔ
好唔好	good	how m̩ how	hom how	how mow
痕唔痕	itchy	hən m̩ hən	həm hən	hən mən
香唔香	fragrant	hœŋ m̩ hœŋ	hœm hœŋ	hœŋ mœŋ

This section is going to focus on the constraint interaction leading to $\text{m}^{21}\text{-}\sigma_2$ contraction, which is highlighted in (65). The relationship between speech tempo and contraction type is to be discussed in Chapter 6. $\text{m}^{21}\text{-}\sigma_2$ contraction involving the onset [h] is the only exception which allows the violation of MAX-C-IO-ONSET. This is due to the special transparent nature of glottal consonants. In fact, the special status of [h] is not unique to Cantonese $\sigma_1\text{-m}^{21}\text{-}\sigma_2$ contraction. It is also found in assimilation processes in many languages.

An intervening consonant between two vowels often blocks vocalic assimilation, but glottals do not. Steriade (1987) finds that glottals are often

transparent to assimilation. Stemberger (1993) infers that glottals are underspecified for consonant and vowel place of articulation features. Goldsmith (1990) suggests that glottals have a 'default place of articulation'. Keating (1985) states that supralaryngeal articulations are irrelevant to glottals, since the tongue is always free to take on any neighboring articulation simultaneously during the production of a glottal. As a result, glottals always take on all supralaryngeal articulations of neighboring segments.

In the discussion of glottal stops in the Sulawesi language, Broselow (2001) agrees that it is more favored to encode place contrasts in onsets. It leads to the effect of banning glottal from onset position:

(66) ONSETPLACE: Onsets must have place. (Broselow 2001:2)

If a glottal consonant is banned and deleted from the output, it leaves behind an onsetless syllable which violates the basic syllable structure constraint ONSET. The shaded column in (65) show that while the labial nasal is not favored to be syllabic, it is urged to take up the onset position of σ_2 , so as to avoid violation of ONSET. Finally, [m-] replaces [h] as the output onset of σ_2 . The constraint interaction is summarized in the following tableau:

(67) Selection of [hɛj məj] 係唔係 (fast speech tempo)

Input: hɛj məj	*NUCLEUS/NASAL	REALIZE- MORPHEME	ONSET	ONSETPLACE	MAX-C-IO-ONSET
a. hɛj məj	*!			**	
b. hɛj hɛj		*!		**	
c. hɛm ɛj			*!	*	*
d. hɛm hɛj				*!*	
e. hɛj məj				*	*

Candidates (a)-(c) violate the undominated constraints *NUCLEUS/NASAL, REALIZE- MORPHEME and ONSET respectively, and thus are ruled out from being optimal. Both Candidate (d) and (e) incur the violation of ONSETPLACE. (d) is more faithful to the input than (e) since it does not delete any onset consonant from the output. However, in a fast speech tempo, ONSETPLACE dominates over the faithfulness constraint MAX-C-IO-ONSET (this point will be elaborated in Chapter 6). Candidate (d) violates ONSETPLACE twice whereas (e) only violates it once. Even though (e) violates MAX-C-IO-ONSET, it is a constraint of the lowest rank, and so it is selected as optimal.

(68) When the null onset of σ is realized as the glottal stop [ʔ]

Chinese Characters	English gloss (X-or-not)	Citation	Slower speech tempo: $\sigma_1\text{-}\mathfrak{m}^{21}$	Faster speech tempo: $\mathfrak{m}^{21}\text{-}\sigma_2$
噏唔噏	utter	ɛp m̩ ɛp	ʔɛm ʔɛp	ʔɛp mɛp
惡唔惡	fierce	ɔk m̩ ɔk	ʔɔm ɔk	ʔɔk mɔk
啱唔啱	correct	am m̩ am	ʔam ʔam	ʔam mam
餓唔餓	hungry	ɔ: m̩ ɔ:	ʔɔm ʔɔ:	ʔɔ: mɔ:
愛唔愛	love	ɔj m̩ ɔj	ʔɔm ʔɔj	ʔɔj mɔj

Apart from the glottal fricative [h], σ with a null onset also favors $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction. With a relatively slower speech tempo, the onsetless syllable and its following nasal /m̩/ undergoes $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction as illustrated in the second last column of (68).

When speech tempo is faster, the syllabic nasal attaches to the following syllable σ_2 , hence taking up the position of a syllable onset. This is illustrated in the last column of (68). In this way, output segments have correspondents in the input. No epenthesis is required to repair the violation of ONSET.

(69) Selection of [ʔɔj mɔj] as optimal candidate (fast speech tempo)

Input: ɔj m̩ ɔj	*NUCLEUS/NASAL	REALIZE-MORPHEME	ONSET	ONSET PLACE	NO CODA
a. ʔɔj m̩ ʔɔj	*!			**	
b. ʔɔj ʔɔj		*!		**	
c. ʔɔm ʔɔj				*!*	*
d. ʔɔj mɔj				*	
e. ɔj m̩ ɔj			*!*		

Note that the faithfulness constraint ONSET used in (69) is not included in

(67), even though both tableaux involve glottal consonants. The reason is that σ is onsetless in the input. Candidate (69e) is identical to the input and it does not violate any faithfulness constraints. However, it violates ONSET which requires that all syllables should have an onset. (69a) and (69b) demonstrate violations of the two highest ranked constraints and consequently they are not selected as optimal output. (69c), which represents $\sigma_1\text{-m}^{21}$ contraction, violates ONSETPLACE twice since there are two glottal consonants. It is comparatively less favored when compared with (69d), which violates it once only. (69d) resyllabifies the labial nasal as the [m-], the output onset of σ_2 , which is an available element in the input. Unlike (69c), it only shows one glottal consonant [ʔ] in the output. It incurs the least ranked constraint and is selected as optimal.

4.5 *Tonal issues*

Tone is brought into discussion in this section. $\sigma_1\text{-}\dot{m}^{21}$ and $\dot{m}^{21}\text{-}\sigma_2$ contractions are discussed separately. Before I discuss the relevant constraints, a new system of notation of Cantonese tones for phonological analysis is to be proposed.

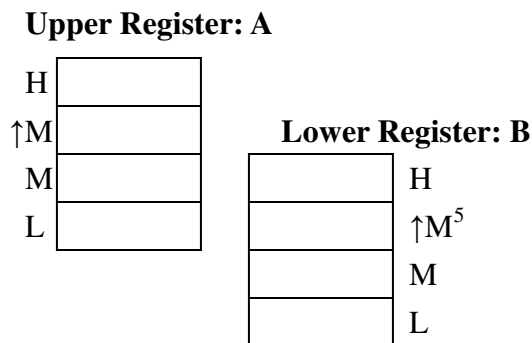
Neither Chao's numbering system (1960) nor Yip's feature system (1980) is adequate for phonological discussion of Cantonese tones in regard to syllable contraction. Chao's system represents the highest pitch in a language as 5 and the lowest pitch as 1. The scale is not meant to represent an absolute value of the pitch. In the products of syllable contraction, the representation of tone by this system can be problematic. For example, the contraction of two syllables with respectively high level 55 and low falling 21 tone results in a high falling tone. There is no way to conclude whether the impressionistic tonal value of this contracted syllable is 51, 52 or 53. It may lead to side-tracking controversies about the absolute value of the ending pitch, which is against the intended aim of this notation system. Hence, it is not favorable for a phonological analysis.

A feature system favors phonological discussion since it is purely categorical. It has provided discrete representation of tones. However, the three features H, M, L are not adequate to represent Cantonese tones. As Yip (2002)

puts it, ‘H, M, L is well suited to systems with no more than three levels, but will not suffice here (in Cantonese).’ (Yip 2002:175) Given high level 55 is H, mid level 33 is M and low level 22 is L (which are all tonemic), it is difficult to represent the low falling tone 21. A feature even lower than L is necessary in order to represent the products of syllable contraction. An example is the contraction of low level 22 and low falling 21, which results in a low falling tone.

In the study of Shanghai tonology, Zhu (1999) introduces a feature system adapted from Yip (1980). Zhu (1999) has kept the Register feature which divides the range of pitch into two halves – Upper Register and Lower Register. A noteworthy difference is that Zhu’s system allows an overlapping area between the two Registers:

(70) Zhu’s schemata for representing Shanghai tones (Zhu 1999:177)⁴



The overlapping area between the two Registers means that M in Upper and H in Lower are of the same height and they are iso-high levels (Zhu 1999:177).

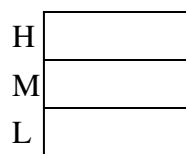
⁴ This is a simplified version which eliminated the feature Truncation which is not relevant to the following discussion.

⁵ ↑M represents a level in between H and M.

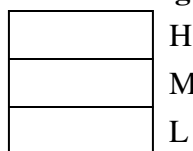
An advantage of this characteristic is that it does not assign mid tones to any polarized category. The high degree of flexibility is favorable for the phonology of syllable contraction. The combination of overlapping Registers and contour features H, M, L can resolve the inadequacy of the previous notation systems. Unlike Shanghainese, a contour system without \uparrow M can suffice the representation of Cantonese tonal inventory. (71) is a schemata for Cantonese tones modified after Zhu (1999). On this basis, (72) presents phonological features of the six Cantonese citation tones:

(71) Proposed schemata for the representation of Cantonese tonal features

Upper Register: A



Lower Register: B



(72) Phonological features of the six Cantonese tones

Tones	Contour	Chao's system	Feature: Register	Feature: contour
T1	High level	55	Upper	H
T2	High rising	35	Upper	LH
T3	Mid level	33	Upper	L
			Lower	H
T4	Low falling	21	Lower	ML
T5	Low rising	13	Lower	LH
T6	Low level	22	Lower	M

The overlapping area in (71) means that L in the Upper and H in the Lower

are iso-high levels. Hence, in (72), the mid level tone can either be represented as [Upper, L] or [Lower, H]. Given this feature system, the following data of syllable contraction will be transcribed in accordance to the Register and contour features.

4.5.1 σ_1 - η^2 contraction

Yip (1980) suggests that Cantonese has a process which deletes the segmental layer of certain morphemes, but leaves the tones intact. Tone melody always remains the same after deletion. Tone should be seen as a separate layer since it is not affected by segmental phonological processes. In the following data set (73), although a whole syllable [jɛt⁵⁵] is deleted, its high tone is realized on the preceding syllable as [t^hiu³⁵]. The same applied to the tone of the syllable [ts^hɔ³⁵] which originally bears a low rising tone 13. [hɛi²⁵] surfaces its high rising tone on its preceding syllable despite its segmental absence on the surface.

(73) Tone preservation in Cantonese (Yip 1980:88-90)

一條一條	jɛt ⁵⁵ t ^h iu ²¹ jɛt ⁵⁵ t ^h iu ²¹	→	一條條	jɛt ⁵⁵ t ^h iu ³⁵ t ^h iu ²¹
坐嚟度	ts ^h ɔ ¹³ hɛi ²⁵ tow ²²	→	坐度	ts ^h ɔ ³⁵ tow ²²

Basing on this observation, one can infer that the following faithfulness constraint on tone is undominated in Cantonese:

(74) MAX-T ‘No deletion of tones.’
(Yip 2002:83)

When two syllables contract, the preservation of tone is achieved via tone

fusion. This process violates constraint (75) NOFUSION which requires the separation of underlying tones. MAX-T is inevitably in conflict with NOFUSION.

(75) NOFUSION ‘Separate underlying tones must stay separate.’
(Yip 2002:83)

The interaction of the two competing constraints may explain tone preservation in $\sigma_1\text{-}\dot{m}^{21}$ contraction. (76) presents the relevant data presented in

Chapter 3:

(76) Preservation of the low falling tone in $\sigma_1\text{-}\dot{m}^{21}$ contraction

Chinese Char.	Citation	Citation: tonal features		Product of contraction	Fusion of contour feature $_{\sigma}[\sigma_1+m]^{x+ML}$	NO fusion $_{\sigma}[\sigma_1+m]^x$
		Register	Contour			
醫唔醫	ji: ⁵⁵ m̄ ²¹ ji: ⁵⁵	Upper	H	jim ⁵¹	H+ML → HL	*H
苦唔苦	fu: ³⁵ m̄ ²¹ fu: ³⁵	Upper	LH	fum ³⁵¹	LH+ML → LHL	*LH
告唔告	kow ³³ m̄ ²¹ kow ³³	Lower	H	kom ³¹	H+ML → HL	*H
移唔移	ji: ²¹ m̄ ²¹ ji: ²¹	Lower	ML	jim ²¹	ML	ML
坐唔坐	ts ^h ɔ: ¹³ m̄ ²¹ ts ^h ɔ: ¹³	Lower	LH	ts ^h ɔm ¹³¹	LH+ML → LHL	*LH
爛唔爛	lan ²² m̄ ²¹ lan ²²	Lower	M	lam ²¹	M + ML → ML	*M

The selection of output in (76) is represented by tableau (77):

(77) Constraint interaction of MAX-T and NOFUSION

Input	Output candidates ⁶	MAX-T	NOFUSION
ji: ^H m̩ ^{ML} ji: ^H	☞ a. jim ^{HL} ji: ^H		*
	b. jim ^H ji: ^H	*!	
fu: ^{LH} m̩ ^{ML} fu: ^{LH}	☞ a. fum ^{LHL} fu: ^{LH}		*
	b. fum ^{LH} fu: ^{LH}	*!	
kow ^H m̩ ^{ML} kow ^H	☞ a. kom ^{HL} kow ^H		*
	b. kom ^H kow ^H	*!	
ts ^h ɔ: ^{LH} m̩ ^{ML} ts ^h ɔ: ^{LH}	☞ a. ts ^h ɔm ^{LHL} ts ^h ɔ: ^{LH}		*
	b. ts ^h ɔm ^{LH} ts ^h ɔ: ^{LH}	*!	
lan ^M m̩ ^{ML} lan ^M	☞ a. lam ^{ML} lan ^M		*
	b. lam ^M lan ^M	*!	

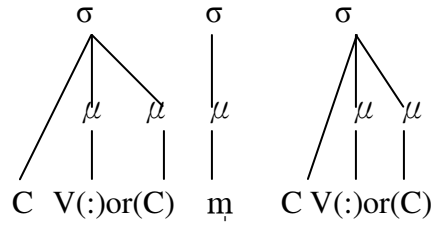
In (77), all candidates (b) delete the tone of /m̩²¹/. They all violate the undominated MAX-T and hence are disqualified as an optimal output. All candidates (a) demonstrate tone fusion which violates the lowest ranked constraint NOFUSION. They are selected as optimal.

4.5.2 m̩²¹-σ₂ contraction

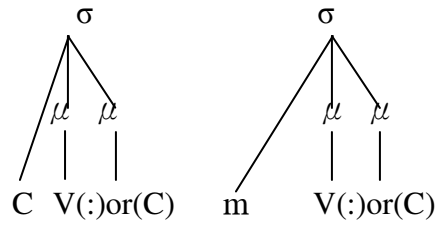
The role of the mora as a tone-bearing unit is the anchoring point to explain the discrepancy of tonal behavior between σ₁-m̩²¹ and m̩²¹-σ₂ contraction. Given that an onset is non-moraic (see Sherer 1994 for discussion), while /m̩²¹/ is resyllabified as the onset of the following syllable, it loses its moraicity as in (78b):

⁶ Note that in cases of H+ML, I take the product as HL rather than HML since when H goes to L, it has to pass M anyway. They represent the same contour. The same is applicable to LH+ML. I take the product as LHL rather than LHML, since they actually represent the same contour.

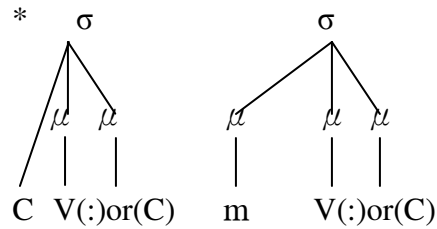
(78) a. Moraic structure of syllables in citation form



b. Legal moraic structure of contracted syllables



c. Illegal linkage of an onset and a mora in contracted syllables



The non-moraic nature of an onset is represented by the following

constraint:

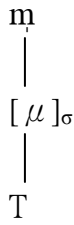
(79) * μ_{ONS} ‘Onsets must not be parsed as moraic.’

A non-moraic onset is not tone-bearing. The loss of moraicity implies the

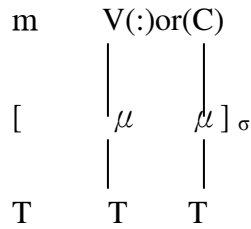
loss of tone-bearing ability. The onset [m-] cannot link to any tone after

contraction as in (80b):

(80) a. [m²¹] carries tone before resyllabification



b. [m²¹] loses the link to tone after becoming a nonmoraic onset



In $m^{21}-\sigma_2$ contraction, the low falling tone of / m^{21} / has to be erased from the output as the labial nasal takes up the position as the onset. It incurs the violation of MAX-T. (81) reduplicates the relevant data which are discussed in the previous chapter. Tableaux (82)-(86) provide an analysis of the selection of the optimal output. They are governed by the same constraint hierarchy * μ_{ONS} >> MAX-T. I will give a unified explanation of these tableaux after tableau (86).

(81) Erasure of the low falling tone in $m^{21}-\sigma_2$ contraction

Chin.C har.	Citation	Citation: tonal features		Product of contraction	Fusion of contour feature after contraction $_{\sigma}[m+\sigma_2]^{ML+x}$	NO fusion of contour feature $_{\sigma}[m+\sigma_2]^x$
		Register	Contour			
開唔開	hɔj ⁵⁵ m ²¹ hɔj ⁵⁵	Upper	H	mɔj ⁵⁵	ML + H → *MLH	H
啱唔啱	am ⁵⁵ m ²¹ am ⁵⁵			mam ⁵⁵		
好唔好	hɔw ³⁵ m ²¹ hɔw ³⁵	Upper	LH	mɔw ³⁵	ML + LH → *MLH	LH
去唔去	hɛj ³³ m ²¹ hɛj ³³	Lower	H	mɛj ³³	ML + H → *MLH	H
係唔係	hɛj ²² m ²¹ hɛj ²²	Lower	M	mɛj ²²	ML + M → *MLM	M

(82) Selection of [mɔj^H] as optimal candidate

Input	Output candidates of $m_i^{21}-\sigma_2$ contr. ⁷	* μ_{ONS}	MAX-T
<p style="text-align: center;">hɔj^H m^{ML} hɔj^H</p>	<p>a. *mɔj^{MLH}</p>	*!	
	<p>b. mɔj^H</p>		*

(83) Selection of [mam^H] as optimal candidate

Input	Output candidates of $m_i^{21}-\sigma_2$ contr.	* μ_{ONS}	MAX-T
<p style="text-align: center;">am^H m^{ML} am^H</p>	<p>a. *mam^{MLH}</p>	*!	
	<p>b. mam^H</p>		*

⁷ I only show the moraic structure of the contracted syllable here. σ_1 is identical to the input.

(86) Selection of [mɛj^M] as optimal candidate

Input	Output candidates of \mathfrak{m}^{21} - σ_2 contr.	* μ_{ONS}	MAX-T
<p style="text-align: center;">hɛj^M m^{ML} hɛj^M</p>	<p>a. *mɛj^{MLM}</p>	*!	
	<p>b. mɛj^M</p>		*

In (82)-(86), all candidates (a) are faithful to the tone of the input. However, all of them violate * μ_{ONS} since they link the onset with a mora. Since * μ_{ONS} is undominated, candidates (a) are eliminated as optimal. All candidates (b) conform to * μ_{ONS} . Even though they violate against tone faithfulness MAX-T, they are selected as optimal.

The constraint rankings in 4.5.1 and 4.5.2 are collapsed into (87). It governs the behavior of tone in all types of σ_1 - \mathfrak{m}^{21} - σ_2 syllable contraction. The constraint prohibiting tone fusion is of the lowest ranked. It is dominated by tone faithfulness. The top of the constraint hierarchy is an undominated constraint which states that onsets are non-moraic, and hence non tone-bearing.

(87) * μ_{ONS} >> MAX-T >> NOFUSION

4.6 Summary of constraint interaction in syllable contraction

In this chapter, I have provided an optimality-theoretic account to explain the generalizations of Chapter 3. I have shown that products of syllable contraction are results of the interaction between a set of universal and violable constraints. The candidate which incurs the least fatal violations is selected as optimal.

*NUCLEUS/NASAL favors a vocalic nucleus over a nasal nucleus. The avoidance of a syllabic nasal is not achieved by total deletion of / m^{21} / due to the undominated REALIZE-MORPHEME which demands the preservation of a morpheme. It is not achieved by compressing the syllabic nasal into a nasal feature due to the undominated * V_{NASAL} . Neither is it achieved through epenthesis of a vowel after the syllabic nasal because DEP-IO prohibits insertion. Oral stop or nasal coda replacement, prohibition against m^{21} - σ_2 contraction of non-glottal onsets, glottal lenition and onset fulfillment are governed by the same hierarchy:

*NUCLEUS/NASAL, REALIZE-MORPHEME, *COMPLEX^{COD}, * V_{NASAL} , IDENT-IO
[PLACE], MAX-C-IO-ONSET, ONSET>> DEP-IO, ONSETPLACE>>
MAX-C-IO>> NO CODA

Lastly, tonal behavior is governed by the following constraint hierarchy:

* μ_{ONS} >> MAX-T >> NOFUSION

I have also demonstrated that the competing forces of speech production are represented via the conflict of markedness and faithfulness constraints.

Undominated faithfulness constraints like REALIZE-MORPHEME draw the bottom line of syllable contraction. It means that the loss of lexical contrast is limited to a degree which does not cause lexical confusion. Faithfulness constraints outranked by markedness constraints (such as MAX-C-IO) indicate that the principle of preserving lexical contrast is sacrificed to a certain extent, usually for the purpose of avoiding articulatorily complex structures.

The set of universal constraints may also address universal tendencies of connected speech. The markedness and faithfulness constraints discussed in this chapter are not limited to Cantonese data. Markedness and basic syllable constraints can reflect the general nature of human speech sounds and universal tendencies of speech. Through the example of Japanese I have shown that cross-linguistic differences in dealing with a certain marked structure can be explained through constraint ranking. In the light of OT, both language-specific and cross-linguistic phenomena can be addressed on the ground of constraint interaction.

CHAPTER 5 PROSODIC CONSTRAINTS GOVERNING SYLLABLE CONTRACTION

This chapter aims at explaining the asymmetrical behavior of the following A-not-A strings in connected speech phonology: namely $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$, $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$, $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$, as well as the simple negation $\mathfrak{m}^{21}\text{-}\sigma_1$ string. I argue that syllable contraction, or the prohibition of syllable contraction, is subjected to prosodic factors. Despite their different patterns, their behavior can be explained by the same ranking of prosodic constraints in accordance to Optimality Theory. First, I compare the prosodic structures of various A-not-A strings. Second, I put forward a set of relevant prosodic constraints. Lastly, I explain how the ranking of these constraints may predict the permissibility of syllable contraction.

5.1 *Prosodic structure of various A-not-A strings*

Cantonese prosodic structure, such as foot and stress, is not yet a well-established subject in the available literature. Since there is no neutral tone or tone sandhi in Cantonese to represent stressless syllables, there is hardly any obvious pattern of speech rhythm, unlike the case of Mandarin. Even native speakers can hardly ‘feel’ stress in Cantonese. As Duanmu (2000) suggests, in a tone language, F0 is used to draw lexical contrasts. As a result, the most important phonetic cue for stress is not available. Nevertheless, there are more subtle ways to prove the existence of stress such as restrictions of word order and word length

(see Duanmu 2000 for discussion). Moreover, in a lot of languages, it is a tendency for a stressed element to keep its features whereas an unstressed element loses some of the features (Duanmu 1993). A simple example from English is vowel reduction in unstressed syllables. A vowel in an unstressed syllable often reduces into a mid vowel [ə]. Such relationship between reduction and stress, which is the head of a foot, is the anchor of the following discussion.

Before describing the prosodic structure of A-not-A strings, I state a number of assumptions regarding Cantonese prosodic structure. First, I assume that the foot structure of Cantonese is binary. Second, I assume that the head¹ is on the left of a foot, and so strong and weak syllables alternate, which is also hypothesized by Lee (2003). Therefore, a Cantonese foot is a binary syllabic trochee.

The four types of strings are divided into two groups. In the first group, syllable contraction is permissible, which includes $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ and $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$. In the second group, syllable contractions of all kinds are prohibited, which includes the $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ and the string of simple negation $\mathfrak{m}^{21}\text{-}\sigma_1$. (88) and (89) present the prosodic structures of the $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ and $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ strings respectively. The transcription of data is shown in the bottom row. The syllables in bold are prone to

¹ To avoid side-tracking controversies, which digress from the theme of syllable contraction, I am not going to use the term ‘stress’ throughout the discussion. I take it as ‘the head of a foot’ in general.

contract into one syllable in connected speech. This is a process which changes the status of the syllabic labial nasal /m/ from an independent syllable into an onset or coda consonant. On Level 0, the number of syllables is marked. On the next level, a foot boundary is drawn and \emptyset represents an empty beat. Finally, Level 2 marks the head of a foot by X.

(88) Prosodic structure of σ_1 -m²¹- σ_2 strings

Level 2	Head	X		X
Level 1	Foot	(σ	σ)	(σ \emptyset)
Level 0	Syllable	σ	σ	σ
Data	濕唔濕	səp	m	səp
	認唔認	jeŋ	m	jeŋ
	開唔開	hɔj	m	hɔj
	惡唔惡	ɔk	m	ɔk

(89) Prosodic structure of σ_1 -m²¹- σ_2 - σ_3 strings

Level 2	Head	X		X
Level 1	Foot	(σ	σ)	(σ σ)
Level 0	Syllable	σ	σ	σ σ
Data	濕唔濕滯	səp	m	səp tsəi
	認唔認識	jeŋ	m	jeŋ sek
	開唔開朗	hɔj	m	hɔj lɔŋ
	惡唔惡死	ɔk	m	ɔk sei

The shaded column in both tables draws the following generalization - the syllable [m] falls on a light beat. It is not the head of any foot. On the contrary, [m] in the other two strings has a different prosodic nature. In tables (90) and (91), the metrical structures of the σ_1 - σ_2 -m²¹- σ_3 - σ_4 and m²¹- σ_1 strings are presented. They are cases where syllable contraction is prohibited. For the m²¹- σ_1 string, any

possible contraction may only concern the syllable following /m/. Therefore, only syllables with glottal consonants are listed.

(90) Prosodic structure of σ_1 - σ_2 - m^{21} - σ_3 - σ_4 strings

Level 2	Head	X		X		X	
Level 1	Foot	(σ	σ)	(σ	σ)	(σ	\emptyset)
Level 0	Syllable	σ	σ	σ	σ	σ	
Data	潮濕 唔 潮濕	ts ^h iw	sɛp	m̩	ts ^h iw	sɛp	
	招認 唔 招認	tsiw	jeŋ	m̩	tsiw	jeŋ	
	開朗 唔 開朗	hɔj	lɔŋ	m̩	hɔj	lɔŋ	
	惡死 唔 惡死	ɔk	sei	m̩	ɔk	sei	

(91) Prosodic structure of m^{21} - σ_1 strings (simple negation)

Level 2	Head	X	
Level 1	Foot	(σ	σ)
Level 0	Syllable	σ	σ
Data	唔 開	m̩	hɔj
	唔 惡	m̩	ɔk

In both tables, [m̩] occupies a head position, as indicated by Level 2. It is a strong beat on the left of a binary foot. The observations from the four tables altogether are evidence to show that when [m̩] is a head of a foot, syllable contraction is consistently prohibited. When [m̩] does not occupy the head position of a foot, it can be reduced from an independent syllable into an onset [m-] or a coda consonant [-m]. There is a strong relationship between syllable contraction and prosody. The phonology of syllable contraction does not only concern the two syllables involved. Rather, it takes place upon a larger domain on the phrase level. The prosodic structure of the whole phrase must be examined in order to predict the permissibility of contraction.

5.2 *Predicting the result of syllable contraction by constraint ranking*

In OT terms, the demand of identity between the input and output is faithfulness. In particular, in regard to head-faithfulness, Dresher and van der Hulst (1995) points out that more phonological complexity is allowed in heads. Marked segments can survive in head position only. Alderete (1995:14) further translates this observation in OT terms, suggesting that faithfulness outranks markedness in head positions. A constraint of head identity is proposed under the faithfulness family:

(92) HEAD-IDENT(F)

‘Correspondent segments in prosodic heads in the input and output agree in value for feature [F].’ (Alderete 1995:14)

For the case of Cantonese syllable contraction, the feature involved is syllabicity. The syllabic labial nasal [m̩] switches between the status as a syllable nucleus and a non-nucleus in different strings during connected speech. (93) specifies the feature of syllabicity:

(93) HEAD-IDENT(SYLLABIC)

‘The syllabicity of a segment in prosodic heads in the input should agree with that of the correspondent segment in the output.’

This constraint is bound to be in conflict with the markedness constraint against syllabic nasals, which is proposed in the previous chapter:

(94) *NUCLEUS/NASAL ‘Against syllabic nasals.’

The prohibition of syllable contraction involving a syllabic nasal in prosodic

heads can be explained by the domination of head identity against markedness:

(95) Selection of permissible contraction in A-not-A strings

Inputs	Candidates	HEAD-IDENT (SYLLABIC)	*NUCLEUS /NASAL
(i) X σ X (σ σ) (σ Ø) səp m̩ səp	☞ a. səm səp		
	b. səp m̩ səp		*!
(ii) X σ X (σ σ) (σ σ) səp m̩ səp tsɛi	☞ a. səm səp tsɛi		
	b. səp m̩ səp tsɛi		*!
(iii) X X X (σ σ) (σ σ) (σ Ø) ts ^h iw səp m̩ ts ^h iw səp	a. ts ^h iw səm ts ^h iw səp	*!	
	☞ b. ts ^h iw səp m̩ ts ^h iw səp		*
(iv) X σ X (σ σ) (σ Ø) ɔk m̩ ɔk	☞ a. ʔɔk mɔk		
	b. ʔɔk m̩ ʔɔk		*!
(v) X σ X (σ σ) (σ σ) ɔk m̩ ɔk sei	☞ a. ʔɔk mɔk sei		
	b. ʔɔk m̩ ʔɔk sei		*!
(vi) X X X (σ σ) (σ σ) (σ Ø) ɔk sei m̩ ɔk sei	a. ʔɔk sei mɔk sei	*!	
	☞ b. ʔɔk sei m̩ ʔɔk sei		*
(vii) X (σ σ) m̩ ɔk	a. mɔk	*!	
	☞ b. m̩ ʔɔk		*

In this tableau, (i)-(iii) involves the contraction of the two syllables [səp m̩]

into [səm]; whereas (iv)-(vii) involves the contraction of [m̩ ək] into [mək]. The former represents the contraction of the syllabic nasal [m̩] with the preceding syllable while the latter represents contraction with the following syllable. In every pair of candidates, contraction takes place in (a) but not in (b). In the inputs (iii), (vi) and (vii), the syllable [m̩] occupies the head position in the foot as indicated by X. Contraction in candidates (a) changes the syllabicity of [m̩] from [+syllabic] into [-syllabic]. This process goes against the demand of head identity. Since the constraint HEAD-IDENT (SYLLABIC) is undominated, all candidates (a) of these inputs incur a fatal violation. Although candidates (b) contain a marked segment [m̩], the violation of *NUCLEUS/NASAL is not fatal since it is of a lower rank. Hence, candidates (b) of (iii), (vi) and (vii) are selected as optimal. Candidates with uncontracted syllables win over the others.

For the inputs (i), (ii), (iv) and (v), the syllabic nasal [m̩] occupies a non-head position in a foot. Contraction in candidates (a) does not violate HEAD-IDENT (SYLLABIC). Since all candidates (b) have a nasal syllable nucleus, they violate *NUCLEUS/NASAL. While candidates (a) do not incur any constraint violation, they are selected as optimal. In these cases, syllable contraction is not prohibited.

5.3 *Summary of prosodic factors*

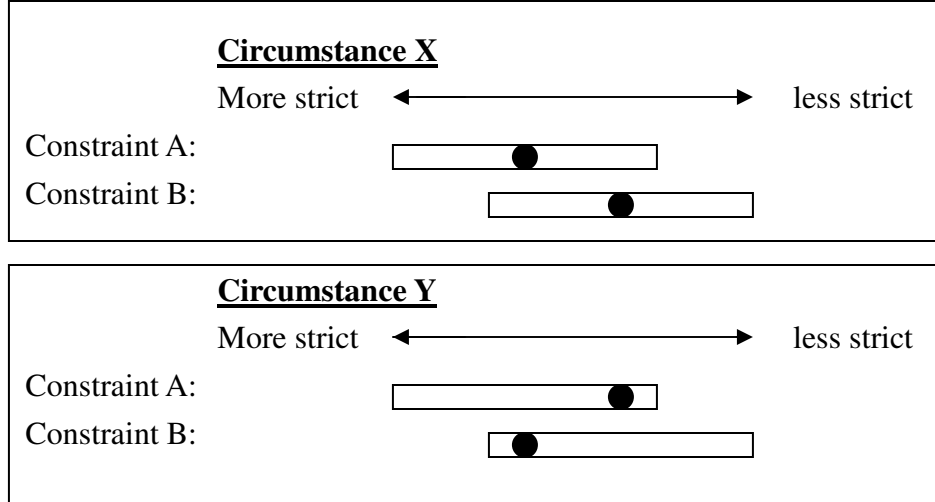
Despite the asymmetrical behavior of [m̩] in different environments, all strings of A-not-A constructions are in fact governed by the same constraint hierarchy: HEAD-IDENT (SYLLABIC)>> *NUCLEUS/NASAL. In $\sigma_1\text{-}\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3\text{-}\sigma_4$ and $\mathfrak{m}^{21}\text{-}\sigma_1$ strings, the syllabic nasal [m̩] is the prosodic head of a foot. Contraction of any kind is prohibited by the faithfulness constraint HEAD-IDENT (SYLLABIC). In $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ and $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2\text{-}\sigma_3$ strings, [m̩] is a prosodic non-head and hence syllable contraction does not incur any fatal violation. To sum up, the phonology of syllable contraction does not only concern the contracted disyllabic string; rather, in the prediction of the behavior of [m̩], a larger prosodic domain on the phrase level should be taken into consideration. While [m̩] is assigned a different position in a foot structure, its pattern of contraction also differs.

CHAPTER 6 VARIATIONS AND CONSTRAINT RE-RANKING

Connected speech forms often demonstrate inter-speaker variations as well as intra-speaker variations. The differences are often due to speech tempo and register. There are contexts that demand different degrees of speech clarity. A formal register demands syllables to be produced closer to citation form. However, in an informal register, a speaker is apt to produce variant forms of syllables as long as effective communication is achieved. These syllables show different degrees of deviation from their citation form. In OT terms, different situations demand different degrees of faithfulness to the input. The faithfulness group of constraints is either undominated or demoted in the hierarchy, depending on the context.

The idea of constraint re-ranking allows a high degree of flexibility to discuss non-obligatory phonological processes in connected speech. Hayes (2000) proposes a model of gradient well-formedness in which constraints are applied more or less strictly within given ranges. When two constraints overlap, it is possible for them to change their relative ranking within a given grammar. This proposal is further illustrated in (96).

(96) The model of gradient well-formedness (Hayes 2000)



Constraint A and Constraint B are two conflicting constraints. Circumstance X represents the default case in which Constraint B is outranked by Constraint A. It is indicated by the black dot. Under Circumstance X, Constraint A is abided more strictly than that of Constraint B. However, the overlapping area of the white box allows room for the relationship of dominance to vary. In Hayes' terms, it is 'somewhat possible' for B to outrank A (Hayes 2000:91) under the exceptional Circumstance Y. It reverses the dominance relationship between the constraints. In other words, Constraint B is re-ranked to a higher position in the constraint hierarchy.

Shepherd (2003) adopts this model to explain the optional realization of Spanish word-final obstruents in informal speech. While obstruent codas are preserved in formal register, they are often dropped in casual speech.

<u>Citation</u>	<u>Casual Speech</u>	<u>Formal Speech</u>	<u>Gloss</u>
/klub/	[klu]	[klub]	club
/aɾɣod/	[aɾɣo]	[aɾɣod]	slang
/usted/	[uste]	[usted]	you
/relog/	[relo]	[relog]	watch
/berðad/	[berða]	[berðad]	true

The optionality of the obstruent coda on the surface form is explained by the

interaction between two conflicting constraints (Shepherd 2003:30):

(97) NO CODA (OBS) ‘Obstruents are banned in syllable codas.’

(98) MAX-C-IO ‘No consonant deletion.’

(99) Analysis of formal speech

Input	Output candidates	MAX-C-IO	NO CODA (OBS)
/klub/	☞ a. klub		*
	b. klu	*!	
/aɾɣod/	☞ a. aɾɣod		*
	b. aɾɣo	*!	
/usted/	☞ a. usted		*
	b. uste	*!	
/relog/	☞ a. relog		*
	b. relo	*!	
/berðad/	☞ a. berðad		*
	b. berða	*!	

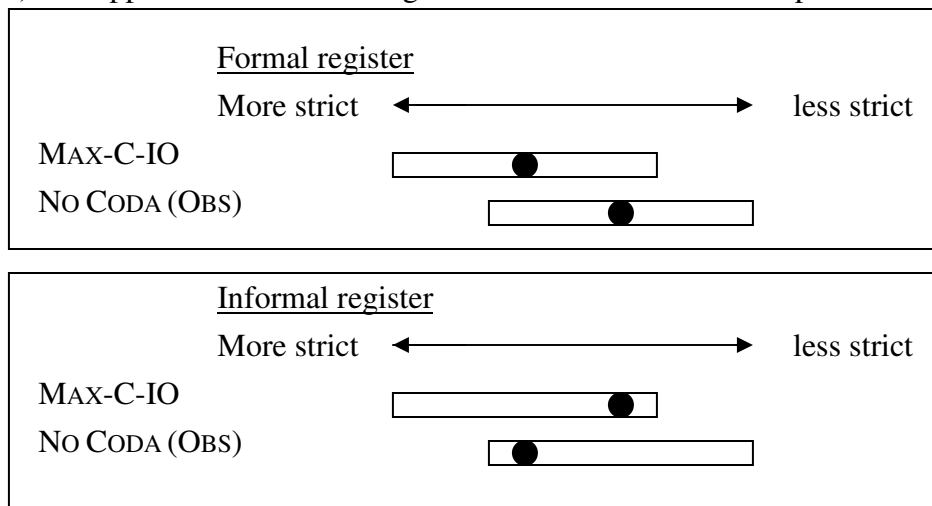
(100) Analysis of casual speech

Input	Output candidates	NO CODA (OBS)	MAX-C-IO
/klub/	a. klub	*!	
	☞ b. klu		*
/aɾɣod/	a. aɾɣod	*!	
	☞ b. aɾɣo		*
/usted/	a. usted	*!	
	☞ b. uste		*
/relog/	a. relog	*!	
	☞ b. relo		*
/berðad/	a. berðad	*!	
	☞ b. berða		*

(99) and (100) only differ in the constraint ranking of the two constraints, which leads to different optimal outputs. In formal speech, the principle to preserve lexical contrast is strictly abided so as to achieve clarity. Hence, the faithfulness constraint MAX-C-IO ranks higher than the markedness constraint NO CODA (OBS). As a result, all candidates (a), which are faithful to the input, are selected as optimal. In casual speech, the need to minimize articulatory gestures overrides clarity drive. Dropping an obstruent coda implies that the articulators may save the effort of moving to the respective place of articulation. As pointed out in 4.4.2, the deletion of a coda does not pose significant perceptual consequences according to positional faithfulness (Beckman 1998). Given these factors, the markedness constraint NO CODA (OBS) dominates over the faithfulness constraint MAX-C-IO and selects candidates (b) as optimal.

Referring back to the model of gradient well-formedness in (96), one may conclude that Circumstance X and Y are parallel to formal and informal register respectively. Constraint A and Constraint B are analogous to the faithfulness constraint MAX-C-IO and the markedness constraint NO CODA (OBS) respectively.

(101) The application of model of gradient well-formedness on Spanish coda



This model is applicable to Cantonese connected speech. Different degrees of reductions under different circumstances can be explained through constraint re-ranking. Variants undergoing different processes can be discussed on the same basis. The following analysis of constraint re-ranking is organized into different levels.

6.1 Variations on the number of morae

As discussed in 3.1.1.1.2 and 3.1.1.1.3, when /m²¹/ is put between two open syllables, or two syllables with offglides, it always surfaces as the coda of the preceding syllable. In slower speech tempo, this process results in an exceptionally long rime as shown in the second column of data set (102).

(102) Varying rime reduction between slow and fast speech

<u>Citation</u>	<u>Slower</u>	<u>Faster</u>	<u>Gloss</u>
/p ^h a: m̩ p ^h a:z/	[p ^h a:m̩ p ^h a:z]	[p ^h am̩ p ^h a:z]	scared or not
/tsi: m̩ tsi:z/	[tsi:m̩ tsi:z]	[tsim̩ tsi:z]	know or not
/ts ^h ɛw̩ m̩ ts ^h ɛw̩z/	[ts ^h ɛum̩ ts ^h ɛw̩z]	[ts ^h ɛm̩ ts ^h ɛw̩z]	stinky or not
/tseŋ̩ m̩ tseŋ̩z/	[tseŋ̩m̩ tseŋ̩z]	[tsem̩ tseŋ̩z]	chase or not
/t ^h ɛj̩ m̩ t ^h ɛj̩z/	[t ^h ɛim̩ t ^h ɛj̩z]	[t ^h ɛim̩ t ^h ɛj̩z]	take a look or not

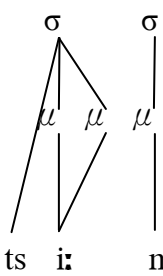
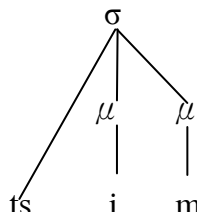
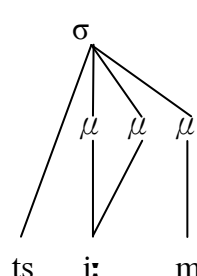
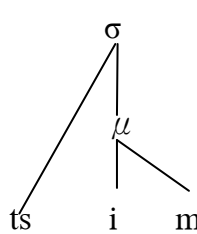
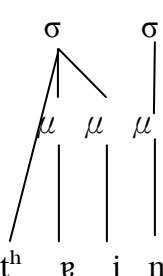
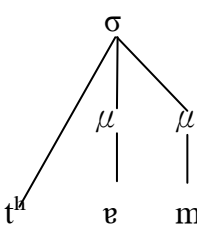
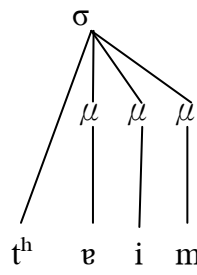
The contraction of the labial nasal into coda causes an additional mora to the originally bimoraic syllable. This long syllable deviates from the bimoraic paradigm of Cantonese syllables (Cheung 1986).

(103) *3 μ ‘No trimoraic syllables.’ (Kager 1999:268)

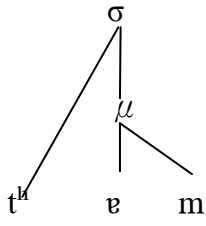
In a faster speech tempo, long syllables are rejected and it leads to the reduction of syllable rime from trimoraic to bimoraic. The adherence to the bimoraic foot facilitates a steady speech rhythm. For open syllables, the original long vowel is reduced. Syllables with offglides delete the offglide from the output. This is demonstrated by the third column of data set (102). Both types of deletion involve the deletion of a mora, which is a violation of maximal faithfulness as in (104). This constraint is inevitably in conflict with *3 μ .

(104) Max- μ -IO ‘Deletion of mora is prohibited.’ (Kager 1999:176)

(105) When speech tempo is slower

Input	Output candidates ¹	Max- μ -IO	*3 μ	
tsi: m̩ tsi: 	a. tsim tsi: 	*!		
	b. tsi:m tsi: 		*	
	c. tsim tsi: 	*!*		
t ^h ej̩ m̩ t ^h ej̩ 	a. t ^h em̩ t ^h ej̩ 	*!		
	b. t ^h eim̩ t ^h ej̩ 		*	

¹ The diagram of moraic analysis only illustrates the moraic change of the contracted syllables i.e. $\sigma_1 + m̩$. σ_2 has the same moraic structure as σ_1 in the input.

	c.	t ^h em t ^h ej	*!*	
				

When speech tempo is relatively slow, the faithfulness constraint Max- μ -IO is undominated. Both candidates (a) and (c) delete at least a mora from the output and are ruled out as optimal. Candidate (b) is a marked trimoraic syllable. However, since $*3\mu$ is the lowest ranked constraint, (b) is still selected as optimal.

(106) When speech tempo is faster

Input	Output candidates	*3 μ	Max- μ -IO
<p>tsi: m̩ tsi:</p>	<p>a. tsim tsi:</p>		*
	<p>b. tsi:m̩ tsi:</p>	*!	
	<p>c. tsim tsi:</p>		*!*
<p>t^hej̩ m̩ t^hej̩</p>	<p>a. t^hem̩ t^hej̩</p>		*
	<p>b. t^heim̩ t^hej̩</p>	*!	

	c.	$t^h e m t^h e j$ σ 		*!**
--	----	-----------------------------------	--	------

(105) and (106) only differ in the ranking of the two conflicting constraints - *3 μ and Max- μ -IO. With a fast speech tempo, the markedness constraint is promoted, reaching an undominated ranking. The marked trimoraic syllable is rejected. The contracted syllable is reduced into a bimoraic structure by deleting a moraic element from the output. In this case, faithfulness gives way to syllable reduction. All candidates (a) have deleted a mora from the syllable rime while all candidates (b) keep the moraic element intact. However, further compression into a monomoraic syllable is prohibited. Candidates (c) violate Max- μ -IO twice, which is relatively less faithful to the input than (a). At last, candidates (a) are selected as optimal.

6.2 Variations on the deletion of segments

As discussed in 3.1.1.2, both σ_1-m^{21} and $m^{21}-\sigma_2$ contraction is allowed for syllables with the glottal consonant [h] or null as the onset. With a slow speech tempo or when the register is formal, σ_1-m^{21} contraction takes place in which the glottal onset of σ_2 is realized in the output. With a fast speech tempo or when

register is informal, the glottal consonant is deleted from σ_2 in the output. This is illustrated by data set (107):

(107) Variant forms of σ_1 - m^{21} - σ_2 contraction when a glottal onset is involved

<u>Citation</u>	<u>Formal/ slower</u>	<u>Casual/ faster</u>	<u>Gloss</u>
/how m̩ how/	[hom how]	[how mow]	good or not
/həʊ m̩ həʊ/	[həm həʊ]	[həʊ məʊ]	go or not
/hœŋ m̩ hœŋ/	[hœm hœŋ]	[hœŋ mœŋ]	fragrant or not

The deletion of a voiceless glottal consonant facilitates continuous voicing.

An intervening voiceless segment interrupts voicing between the nasal [m] and the following vowel. In the example of σ_1 - m^{21} contraction [həm həʊ], voicing between [m] of σ_1 and [ə] of σ_2 is obstructed by [h] of σ_2 . The vibration of vocal cords has to stop at first to produce a voiceless glottal fricative and resumes again to produce a vowel. However, when [h] of σ_2 is replaced by [m] i.e. [həʊ məʊ], voicing is constant. Given that the deletion of glottals does not cause perceptual difficulties (discussed in Chapter 4), the replacement of a glottal by [m] is favorable in fast speech.

(108) When speech tempo is slower/ When the register is formal

Input	Output candidates	MAX-C-IO-ONSET	ONSETPLACE
how m̩ how	a. hom how		**
	b. how mow	*!	*
həʊ m̩ həʊ	a. həm həʊ		**
	b. həʊ məʊ	*!	*

(109) When speech tempo is faster/ When the register is informal

Input	Output candidates	ONSETPLACE	MAX-C-IO-ONSET
how m̩ how	a. hom how	*!*	
	☞ b. how mow	*	*
həʊ m̩ həʊ	a. həm həʊ	*!*	
	☞ b. həʊ məʊ	*	*

(108) and (109) only differ in the ranking of the two conflicting constraints introduced in 4.4.2. In a formal register, clarity is the most important concern and so faithfulness constraints always outrank markedness. As a result, candidates (a) which do not delete [h] are optimal. On the other way round, in an informal register, the need to minimize articulatory effort overrides the need to draw lexical contrast. Faithfulness is demoted in the constraint hierarchy. Consequently, candidates (b), which violate ONSETPLACE only once, are selected as optimal.

6.3 Variations on the number of syllables

All cases of $\sigma_1\text{-m}^{21}\text{-}\sigma_2$ syllable contraction reduce the three syllables into two in connected speech. In situations where a speaker wants to draw emphasis on the A-not-A question, syllables are uttered one by one strictly according to the citation form. This is represented by the second column of data set (110):

(110) Normal speech versus a context in which a speaker is drawing emphasis

<u>Citation</u>	<u>Drawing emphasis</u>	<u>Normal speech</u>	<u>Gloss</u>
/how mə how/	[how mə how]	[how mow]	good or not
/tsi: mə tsi:/	[tsi: mə tsi:]	[tsim tsi:]	know or not
/tsən mə tsən/	[tsən mə tsən]	[tsəm tsən]	true or not
/səp mə səp/	[səp mə səp]	[səm səp]	wet or not

In this case the syllabicity of the nasal is kept and the number of syllables is not reduced. Deletion of any element from the input is rejected. Absolute faithfulness to the input is required.

(111) When a speaker wants to draw emphasis

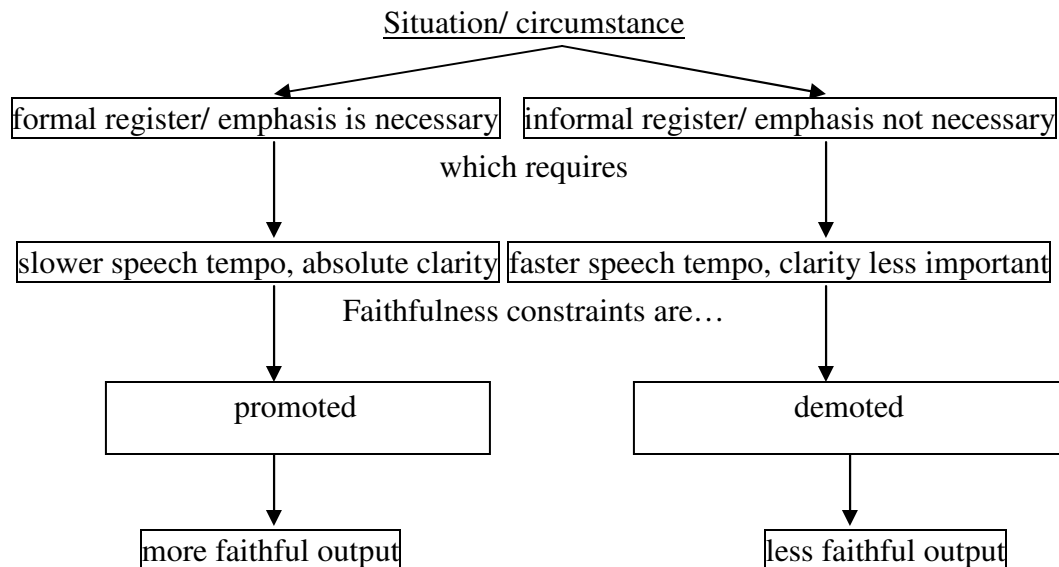
Input	Output candidates	MAX-C-IO-ONSET	MAX-C-IO	*NUCLEUS/NASAL
how mə how	☞ a. how mə how			*
	b. how mow	*!		
tsi: mə tsi:	☞ a. tsi: mə tsi:			*
	b. tsim tsi:		*!	
tsən mə tsən	☞ a. tsən mə tsən			*
	b. tsəm tsən		*!	
səp mə səp	☞ a. səp mə səp			*
	b. səm səp		*!	

(112) Normal connected speech

Input	Output candidates	*NUCLEUS/NASAL	MAX-C-IO-ONSET	MAX-C-IO
how mə how	a. how mə how	*!		
	☞ b. how mow		*	
tsi: mə tsi:	a. tsi: mə tsi:	*!		
	☞ b. tsim tsi:			*
tsən mə tsən	a. tsən mə tsən	*!		
	☞ b. tsəm tsən			*
səp mə səp	a. səp mə səp	*!		
	☞ b. səm səp			*

Variant forms of connected speech are explained through the interaction of markedness and faithfulness constraints. (111) and (112) differ only in terms of the constraint ranking. All candidates (a) are identical to the citation form. They are maximally faithful to the input. The faithfulness constraint MAX-C-IO-ONSET and MAX-C-IO outrank the markedness *NUCLEUS/NASAL. Hence, (a) is selected as optimal. However, when a speaker does not particularly emphasize certain words in the utterance, the principle of preserving lexical contrast is employed less forcefully. Faithfulness constraints are demoted. As a result, *NUCLEUS/NASAL outranks MAX-C-IO-ONSET and MAX-C-IO. All candidates (b) in (112) are optimal. The relationship between register, speech tempo and constraint re-ranking is summarized in (113):

(113) Summary of σ_1 - m^{21} - σ_2 variants



Different speech contexts pose different demands on clarity of speech. In a formal register or when a speaker wants to draw emphasis on certain words, speech tempo must be slowed down. The importance of clarity implies that the principle of preserving lexical contrast is given the highest priority. Faithfulness constraints are promoted to the highest rank in constraint hierarchy, resulting in the selection of a more faithful output. On the contrary, in informal speech, absolute clarity is not a major concern. The reduction of articulatory gestures is favorable. In this case, faithfulness constraints are outranked by markedness and the evaluator selects a less faithful output. Seen in this light, the variant forms of connected speech can be analyzed on a common ground – a set of conflicting constraints. The priority given to preservation of contrast in a particular context can be reflected by the ranking of faithfulness constraints.

CHAPTER 7 CONCLUSION

In retrospect of the research questions stated in Chapter 1, this chapter summarizes how the previous chapters have provided us with answers. It also identifies areas for further research. (114) is a duplicate of research questions in

Chapter 1:

- (114) Research questions of this thesis
- i. If the choice between $\sigma_1\text{-}\mathfrak{m}^{21}$ and $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction is not random, what are the patterns?
 - ii. Why does a syllabic nasal lose its syllabicity in connected speech? What is the force which triggers its contraction with other syllables?
 - iii. Does contraction take place under other circumstances such as the $\sigma_1.\sigma_2\text{-}\mathfrak{m}^{21}\text{-}\sigma_3.\sigma_4$ string and the simple negation $\mathfrak{m}^{21}\text{-}\sigma_1$? If it is not the case, how can patterns of contraction be predicted?
 - iv. Is there any available theoretical framework whose flexibility is able to cater the high degree of inter/intra-speaker variation in connected speech?

Regarding the first question, I have demonstrated in Chapter 3 that the contraction of the trisyllabic string $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ is subject to phonological conditions. $\sigma_1\text{-}\mathfrak{m}^{21}$ contraction is available to all types of syllables but $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction is limited to glottal or null onsets. When $/\mathfrak{m}^{21}/$ becomes as the coda of σ_1 , it replaces the original coda of σ_1 . The low falling tonal feature [ML] of $/\mathfrak{m}^{21}/$ is always preserved in the output of contraction. When $/\mathfrak{m}^{21}/$ takes up the onset position of σ_2 , it deletes the original onset and fills up the syllable initial position. The tonal feature [ML] is always erased from the contracted form. Different

speech contexts result in variant forms, which may differ on the moraic, segmental or syllabic level. A faster speech tempo results in the deletion of more elements from the citation form. However, under all circumstances, the syllabic nasal /m̩²¹/ is never reduced further into a nasal feature or a null. This validates my first hypothesis that the morpheme /m̩²¹/ is always manifested with phonological instantiation in the output form.

The loss of syllabicity of /m̩²¹/ is triggered by sonority factors. The preference of a vocalic nuclei over a nasal one is translated into the undominated markedness constraint *NUCLEUS/NASAL in Optimality Theory. The demand of a sonorous nucleus urges the contraction of /m̩²¹/ into a consonantal coda or onset. It causes reduction of the original coda or onset, which is predictable by ranking relevant markedness and faithfulness constraints. It echoes with my second hypothesis that variant forms of /m̩²¹/ in connected speech are governed by the same set of universal constraints while variation is attributed to constraint ranking.

In regard to the third question, I have shown evidence that contraction behavior in various strings is governed by prosodic factors. While /m̩²¹/ occupies a head position in a foot, syllable contraction in $\sigma_1.\sigma_2\text{-m̩}^{21}\text{-}\sigma_3.\sigma_4$ and $\text{m̩}^{21}\text{-}\sigma_1$ strings are prohibited by the faithfulness constraint of head identity. In other

strings where /m²¹/ is not a prosodic head, reduction of /m²¹/ into a non-syllabic consonant is permissible. This verifies my hypothesis that asymmetrical behavior of /m²¹/ in different A-not-A constructions is motivated by prosodic constituency.

The mechanism of constraint re-ranking allows a unified discussion of variant forms and conflicts between various principles. I have argued that the priority given to the principle of preserving lexical contrast can be reflected by the ranking of faithfulness constraint in an OT constraint hierarchy. The idea that optimality is relative contributes to a high flexibility in the discussion of σ_1 -m²¹- σ_2 variants. The re-ranking mechanism selects a different output for different circumstances. Faithfulness constraints are promoted when a context demands clarity of speech and gives a high priority to the preservation of lexical contrast. It breaks away from the rule-based or autosegmental approach which fails to represent whether the principle of preserving contrast is sacrificed or upheld during speech production.

The assumption that constraints are universal contributes to the discussion of cross-linguistic post-lexical processes. If speakers of all languages are driven by the same principles of speech i.e. minimization of effort and preservation of lexical contrast, we should be able to draw similarities of connected speech phenomena between different languages. Even though different languages tackle

a particular marked structure by very different mechanisms, they can be discussed on the same ground of constraints. The issue of universality and language specificity can be addressed simultaneously.

A large portion of the thesis discusses the data of Hong Kong Cantonese. In fact, the syllabic nasal is not unique to Cantonese. For example, Mpiranya (1995:39) observes that Swahili N.C (syllabic nasal followed by a consonant) pattern demonstrates variant forms. A syllabic nasal is deleted if the following syllable is unstressed. When followed by a stressed syllable, the syllabic nasal does not undergo any reduction. On the other hand, Wright (2003) investigates the behavior of the unstressed hesitation particle *um* or *uh* in English spontaneous speech. The particle never surfaces as a syllabic nasal (Wright 2003:2). When preceded by *and*, it is always resyllabified as *an.dum*. A comprehensive cross-linguistic comparison of syllabic nasals may shed light on the research of prosody, nature of speech sounds and connected speech in general.

APPENDIX I

Transcription of $\sigma_1\text{-}\mathfrak{m}^{21}\text{-}\sigma_2$ phrases

Remarks:

1. The tone of illegal $\mathfrak{m}^{21}\text{-}\sigma_2$ contraction is not shown because such contraction is impermissible under any circumstances regardless of tonal behavior.
2. The segments in parenthesis are optional. They are realized in a relatively slower speech tempo and are dropped in a faster speech tempo.
3. A syllable without a corresponding Chinese character is indicated as \emptyset .

Item no.	Chinese Charac-ters	English Gloss (X-or-not)	Citation	$\sigma_1\text{-}\mathfrak{m}^{21}$ contraction	$\mathfrak{m}^{21}\text{-}\sigma_2$ contraction
1	霸唔霸	occupy	pa: ³³ m̄ ²¹ pa: ³³	pa(:)m ³¹ pa: ³³	*pa: ma:
2	擺唔擺	put	paj ³⁵ m̄ ²¹ paj ³⁵	pa(i)m ³⁵¹ paj ³⁵	*paj maj
3	俾唔俾	give	pej ³⁵ m̄ ²¹ pej ³⁵	pe(i)m ³⁵¹ pej ³⁵	*pej mej
4	背唔背	memorize	puŋ ²² m̄ ²¹ puŋ ²²	pu(ŋ)m ²¹ puŋ ²²	*puŋ muŋ
5	包唔包	wrap	paw ⁵⁵ m̄ ²¹ paw ⁵⁵	pa(u)m ⁵¹ paw ⁵⁵	*paw maw
6	飽唔飽	full	paw ³⁵ m̄ ²¹ paw ³⁵	pa(u)m ³⁵¹ paw ³⁵	*paw maw
7	爆唔爆	explode	paw ³³ m̄ ²¹ paw ³³	pa(u)m ³¹ paw ³³	*paw maw
8	標唔標	mark	piw ⁵⁵ m̄ ²¹ piw ⁵⁵	pi(u)m ⁵¹ piw ⁵⁵	*piw miw
9	補唔補	repair	pow ³⁵ m̄ ²¹ pow ³⁵	po(u)m ³⁵¹ pow ³⁵	*pow mow

10	煲唔煲	cook	pow ⁵⁵ m̩ ²¹ pow ⁵⁵	po(u)m ⁵¹ pow ⁵⁵	*pow mow
11	保唔保	save	pow ³⁵ m̩ ²¹ pow ³⁵	po(u)m ³⁵¹ pow ³⁵	*pow mow
12	報唔報	report	pow ³³ m̩ ²¹ pow ³³	po(u)m pow ³³	*pow mow
13	八唔八	nosy	pat ³ m̩ ²¹ pat ³	pam ³¹ pat ³	*pat mat
14	別唔別	exquisite	pit ² m̩ ²¹ pit ²	pim ²¹ pit ²	*pit mit
15	白唔白	pale	pak ² m̩ ²¹ pak ²	pam ²¹ pak ²	*pak mak
16	逼唔逼	force	pek ⁵ m̩ ²¹ pek ⁵	pem ⁵¹ pek ⁵	*pek mek
17	搏唔搏	wrestle	pək ³ m̩ ²¹ pək ³	pəm ³¹ pək ³	*pək mək
18	駁唔駁	connect	pək ³ m̩ ²¹ pək ³	pəm ³¹ pək ³	*pək mək
19	薄唔薄	thin	pək ² m̩ ²¹ pək ²	pəm ²¹ pək ²	*pək mək
20	扮唔扮	pretend	pan ²² m̩ ²¹ pan ²²	pam ²¹ pan ²²	*pan man
21	辦唔辦	handle	pan ²² m̩ ²¹ pan ²²	pam ²¹ pan ²²	*pan man
22	扁唔扁	flat	pin ³⁵ m̩ ²¹ pin ³⁵	pim ³⁵¹ pin ³⁵	*pin min
23	變唔變	change	pin ³³ m̩ ²¹ pin ³³	pim ³¹ pin ³³	*pin min
24	搬唔搬	move (house)	pun ⁵⁵ m̩ ²¹ pun ⁵⁵	pum ⁵¹ pun ⁵⁵	*pun mun
25	幫唔幫	help	pəŋ ⁵⁵ m̩ ²¹ pəŋ ⁵⁵	pəm ⁵¹ pəŋ ⁵⁵	*pəŋ məŋ
26	磅唔磅	weigh	pəŋ ²² m̩ ²¹ pəŋ ²²	pəm ²¹ pəŋ ²²	*pəŋ məŋ
27	怕唔怕	scared of	p ^h a: ³³ m̩ ²¹ p ^h a: ³³	p ^h a:(^ɔ)m ³¹ p ^h a: ³³	*p ^h a: ma:
28	扒唔扒	pickpocket	p ^h a: ²¹ m̩ ²¹ p ^h a: ²¹	p ^h a:(^ɔ)m ²¹ p ^h a: ²¹	*p ^h a: ma:

29	爬唔爬	crawl	p ^h a: ²¹ m ²¹ p ^h a: ²¹	p ^h a(ː)m ²¹ p ^h a: ²¹	*p ^h a: ma:
30	Ø 唔 Ø	listless	p ^h ɛ: ¹³ m ²¹ p ^h ɛ: ¹³	p ^h ɛ(ː)m ¹³¹ p ^h ɛ: ¹³	*p ^h ɛ: mɛ:
31	破唔破	break	p ^h ɔ: ³³ m ²¹ p ^h ɔ: ³³	p ^h ɔ(ː)m ³¹ p ^h ɔ: ³³	*p ^h ɔ: mɔ:
32	派唔派	deliver	p ^h aj ³³ m ²¹ p ^h aj ³³	p ^h a(i)m ³¹ p ^h aj ³³	*p ^h aj maj
33	排唔排	queue	p ^h aj ²¹ m ²¹ p ^h aj ²¹	p ^h a(i)m ²¹ p ^h aj ²¹	*p ^h aj maj
34	配唔配	match	p ^h uɥ ³³ m ²¹ p ^h uɥ ³³	p ^h u(ɥ)m ³¹ p ^h uɥ ³³	*p ^h uɥ muɥ
35	賠唔賠	compensate	p ^h uɥ ²¹ m ²¹ p ^h uɥ ²¹	p ^h u(ɥ)m ²¹ p ^h uɥ ²¹	*p ^h uɥ muɥ
36	跑唔跑	run	p ^h aw ³⁵ m ²¹ p ^h aw ³⁵	p ^h a(u)m ³⁵¹ p ^h aw ³⁵	*p ^h a:w maw
37	飄唔飄	swift	p ^h iw ⁵⁵ m ²¹ p ^h iw ⁵⁵	p ^h i(u)m ⁵¹ p ^h iw ⁵⁵	*p ^h iw miw
38	蒲唔蒲	hang out	p ^h ow ²¹ m ²¹ p ^h ow ²¹	p ^h o(u)m ²¹ p ^h ow ²¹	*p ^h ow mow
39	撇唔撇	leave	p ^h it ³ m ²¹ p ^h it ³	p ^h im ³¹ p ^h it ³	*p ^h it mit
40	泊唔泊	park (a car)	p ^h ak ³ m ²¹ p ^h ak ³	p ^h am ³¹ p ^h ak ³	*p ^h ak mak
41	嗲唔嗲	take drugs	p ^h ak ⁵ m ²¹ p ^h ak ⁵	p ^h am ⁵¹ p ^h ak ⁵	*p ^h ak mak
42	劈唔劈	chop	p ^h ek ³ m ²¹ p ^h ek ³	p ^h em ³¹ p ^h ek ³	*p ^h ek mɛk
43	頻唔頻	incessant	p ^h en ²¹ m ²¹ p ^h en ²¹	p ^h em ²¹ p ^h en ²¹	*p ^h en mɛn
44	偏唔偏	deviate	p ^h in ⁵⁵ m ²¹ p ^h in ⁵⁵	p ^h im ⁵¹ p ^h in ⁵⁵	*p ^h in min
45	平唔平	cheap	p ^h ɛŋ ²¹ m ²¹ p ^h ɛŋ ²¹	p ^h em ²¹ p ^h ɛŋ ²¹	*p ^h ɛŋ mɛŋ
46	花唔花	variegated	fa: ⁵⁵ m ²¹ fa: ⁵⁵	fa(ː)m ⁵¹ fa: ⁵⁵	*fa: ma:
47	化唔化	make up	fa: ³³ m ²¹ fa: ³³	fa(ː)m ³¹ fa: ³³	*fa: ma:

48	火唔火	angry	fɔ: ³⁵ m̩ ²¹ fɔ: ³⁵	fɔ(ɔ)m ³⁵¹ fɔ: ³⁵	*fɔ: mɔ:
49	苦唔苦	bitter	fu: ³⁵ m̩ ²¹ fu: ³⁵	fu(ɔ)m ³⁵¹ fu: ³⁵	*fu: mu:
50	富唔富	rich	fu: ³³ m̩ ²¹ fu: ³³	fu(ɔ)m ³¹ fu: ³³	*fu: mu:
51	快唔快	quick	faj ³³ m̩ ²¹ faj ³³	fa(i)m ³¹ faj ³³	*faj maj
52	廢唔廢	useless	fɛj ³³ m̩ ²¹ fɛj ³³	fɛ(i)m ³¹ fɛj ³³	*fɛj mɛj
53	飛唔飛	fly	fɛj ⁵⁵ m̩ ²¹ fɛj ⁵⁵	fɛ(i)m ⁵¹ fɛj ⁵⁵	*fɛj mɛj
54	肥唔肥	fat	fɛj ²¹ m̩ ²¹ fɛj ²¹	fɛ(i)m ²¹ fɛj ²¹	*fɛj mɛj
55	灰唔灰	pessimistic	fuy ⁵⁵ m̩ ²¹ fuy ⁵⁵	fu(ɥ)m ⁵¹ fuy ⁵⁵	*fuy muɥ
56	發唔發	rich	fat ³ m̩ ²¹ fat ³	fam ³¹ fat ³	*fat mat
57	闊唔闊	wide	fut ³ m̩ ²¹ fut ³	fum ³¹ fut ³	*fut mut
58	服唔服	surrender	fok ² m̩ ²¹ fok ²	fom ²¹ fok ²	*fok mok
59	返唔返	return	fan ⁵⁵ m̩ ²¹ fan ⁵⁵	fam ⁵¹ fan ⁵⁵	*fan man
60	反唔反	reverse	fan ³⁵ m̩ ²¹ fan ³⁵	fam ³⁵¹ fan ³⁵	*fan man
61	煩唔煩	troublesome	fan ²¹ m̩ ²¹ fan ²¹	fam ²¹ fan ²¹	*fan man
62	分唔分	separate	fɛn ⁵⁵ m̩ ²¹ fɛn ⁵⁵	fɛm ⁵¹ fɛn ⁵⁵	*fɛn mɛn
63	瞓唔瞓	sleep	fɛn ³³ m̩ ²¹ fɛn ³³	fɛm ³¹ fɛn ³³	*fɛn mɛn
64	∅ 唔 ∅	shake away	fɛŋ ²² m̩ ²¹ fɛŋ ²²	fɛm ²¹ fɛŋ ²²	*fɛŋ mɛŋ
65	放唔放	release	fɔŋ ³³ m̩ ²¹ fɔŋ ³³	fɔm ³¹ fɔŋ ³³	*fɔŋ mɔŋ
66	封唔封	seal	fɔŋ ⁵⁵ m̩ ²¹ fɔŋ ⁵⁵	fɔm ⁵¹ fɔŋ ⁵⁵	*fɔŋ mɔŋ

67	孖唔孖	stay a pair	ma: ⁵⁵ m̩ ²¹ ma: ⁵⁵	ma(:)m ⁵¹ ma: ⁵⁵	*ma: ma:
68	麻唔麻	numb	ma: ²¹ m̩ ²¹ ma: ²¹	ma(:)m ²¹ ma: ²¹	*ma: ma:
69	埋唔埋	bury	maj ²¹ m̩ ²¹ maj ²¹	ma(i)m ²¹ maj ²¹	*maj maj
70	買唔買	buy	maj ¹³ m̩ ²¹ maj ¹³	ma(i)m ¹³¹ maj ¹³	*maj maj
71	賣唔賣	sell	maj ²² m̩ ²¹ maj ²²	ma(i)m ²¹ maj ²²	*maj maj
72	霉唔霉	molded	muɿ ²¹ m̩ ²¹ muɿ ²¹	mu(ɥ)m ²¹ muɿ ²¹	*muɿ muɿ
73	∅ 唔 ∅	wipe	mat ³ m̩ ²¹ mat ³	mam ³¹ mat ³	*mat mat
74	密唔密	dense	met ² m̩ ²¹ met ²	məm ²¹ met ²	*met met
75	滅唔滅	tear	mit ⁵ m̩ ²¹ mit ⁵	mim ⁵¹ mit ⁵	*mit mit
76	滅唔滅	get rid of	mit ² m̩ ²¹ mit ²	mim ²¹ mit ²	*mit mit
77	擘唔擘	tear apart	mak ³ m̩ ²¹ mak ³	mam ³¹ mak ³	*mak mak
78	剝唔剝	peel off	mək ⁵ m̩ ²¹ mək ⁵	məm ⁵¹ mək ⁵	*mək mək
79	木唔木	idle	mok ² m̩ ²¹ mok ²	mom ²¹ mok ²	*mok mok
80	蠻唔蠻	vulgar	man ²¹ m̩ ²¹ man ²¹	mam ²¹ man ²¹	*man man
81	慢唔慢	slow	man ²² m̩ ²¹ man ²²	mam ²¹ man ²²	*man man
82	問唔問	ask	mən ²² m̩ ²¹ mən ²²	məm ²¹ mən ²²	*mən mən
83	∅ 唔 ∅	too close to deadline	mən ³³ m̩ ²¹ mən ³³	məm ³¹ mən ³³	*mən mən
84	悶唔悶	boring	mun ²² m̩ ²¹ mun ²²	mum ²¹ mun ²²	*mun mun
85	盲唔盲	blind	maŋ ²¹ m̩ ²¹ maŋ ²¹	mam ²¹ maŋ ²¹	*maŋ maŋ

86	Ø 唔 Ø	irritated	məŋ ³⁵ m̩ ²¹ məŋ ³⁵	məm ³⁵¹ məŋ ³⁵	*məŋ məŋ
87	明唔明	understand	mɛŋ ²¹ m̩ ²¹ mɛŋ ²¹	mɛm ²¹ mɛŋ ²¹	*mɛŋ mɛŋ
88	忙唔忙	busy	mɔŋ ²¹ m̩ ²¹ mɔŋ ²¹	mɔm ²¹ mɔŋ ²¹	*mɔŋ mɔŋ
89	望唔望	look at	mɔŋ ²² m̩ ²¹ mɔŋ ²²	mɔm ²¹ mɔŋ ²²	*mɔŋ mɔŋ
90	懵唔懵	stupid	moŋ ³⁵ m̩ ²¹ moŋ ³⁵	mom ³⁵¹ moŋ ³⁵	*moŋ moŋ
91	打唔打	beat	ta: ³⁵ m̩ ²¹ ta: ³⁵	ta(ɔ)m ³⁵¹ ta: ³⁵	*ta: ma:
92	嗲唔嗲	spoiled	tɛ: ³⁵ m̩ ²¹ tɛ: ³⁵	tɛ(ɔ)m ³⁵¹ tɛ: ³⁵	*tɛ: mɛ:
92	多唔多	many	tɔ: ⁵⁵ m̩ ²¹ tɔ: ⁵⁵	tɔ(ɔ)m ⁵¹ tɔ: ⁵⁵	*tɔ: mɔ:
94	墮唔墮	fall	tɔ: ²² m̩ ²¹ tɔ: ²²	tɔ(ɔ)m ²¹ tɔ: ²²	*tɔ: mɔ:
95	大唔大	big	taj ²² m̩ ²¹ taj ²²	ta(i)m ²¹ taj ²²	*taj maj
96	戴唔戴	put on	taj ³³ m̩ ²¹ taj ³³	ta(i)m ³¹ taj ³³	*taj maj
97	抵唔抵	worth	tɛj ³⁵ m̩ ²¹ tɛj ³⁵	tɛ(i)m ³⁵¹ tɛj ³⁵	*tɛj məj
98	對唔對	make a pair	tɔɣ ³³ m̩ ²¹ tɔɣ ³³	tɛ(ɣ)m ³¹ tɔɣ ³³	*tɔɣ məɣ
99	吊唔吊	hang	tiw ³³ m̩ ²¹ tiw ³³	ti(u)m ³¹ tiw ³³	*tiw miw
100	倒唔倒	pour	tow ³⁵ m̩ ²¹ tow ³⁵	to(u)m ³⁵¹ tow ³⁵	*tow mow
101	搵唔搵	hammer	tɛp ² m̩ ²¹ tɛp ²	tɛm ²¹ tɛp ²	*tɛp məp
102	貼唔貼	stick	t ^h ip ³ m̩ ²¹ t ^h ip ³	t ^h im ³¹ t ^h ip ³	*t ^h ip mip
103	貼唔貼	guess	t ^h ip ⁵ m̩ ²¹ t ^h ip ⁵	t ^h im ⁵¹ t ^h ip ⁵	*t ^h ip mip
104	跌唔跌	fall	tit ³ m̩ ²¹ tit ³	tim ³¹ tit ³	*tit mit

105	凸唔凸	protruding	tət ² m̩ ²¹ tət ²	təm ²¹ tət ²	*tət mət
106	Ø 唔 Ø	protrude the lips	tyt ⁵ m̩ ²¹ tyt ⁵	tym ⁵¹ tyt ⁵	*tyt myt
107	得唔得	able	tək ⁵ m̩ ²¹ tək ⁵	təm ⁵¹ tək ⁵	*tək mək
108	特唔特	special	tək ² m̩ ²¹ tək ²	təm ²¹ tək ²	*tək mək
109	度唔度	measure	tək ² m̩ ²¹ tək ²	təm ²¹ tək ²	*tək mək
110	毒唔毒	poisonous	tok ² m̩ ²¹ tok ²	tom ²¹ tok ²²	*tok mok
111	剝唔剝	chop into pieces	tøk ³ m̩ ²¹ tøk ³	tøk ³¹ tøk ³	*tøk møk
112	擔唔擔	carry	tam ⁵⁵ m̩ ²¹ tam ⁵⁵	tam ⁵¹ tam ⁵⁵	*tam mam
113	點唔點	order	tim ³⁵ m̩ ²¹ tim ³⁵	tim ³⁵¹ tim ³⁵	*tim mim
114	掂唔掂	capable	tim ²² m̩ ²¹ tim ²²	tim ²¹ tim ²²	*tim mim
115	彈唔彈	bouncy	tan ²² m̩ ²¹ tan ²²	tam ²¹ tan ²²	*tan man
116	癲唔癲	crazy	tin ⁵⁵ m̩ ²¹ tin ⁵⁵	tim ⁵¹ tin ⁵⁵	*tin min
117	短唔短	short	tyn ³⁵ m̩ ²¹ tyn ³⁵	tym ³⁵¹ tyn ³⁵	*tyn myn
118	燉唔燉	stew	tən ²² m̩ ²¹ tən ²²	təm ²¹ tən ²²	*tən mən
119	掙唔掙	throw	teŋ ³³ m̩ ²¹ teŋ ³³	təm ³¹ teŋ ³³	*teŋ meŋ
120	頂唔頂	bear	teŋ ³⁵ m̩ ²¹ teŋ ³⁵	təm ³⁵¹ teŋ ³⁵	*teŋ meŋ
121	定唔定	stable	teŋ ²² m̩ ²¹ teŋ ²²	teŋ ²¹ teŋ ²²	*teŋ meŋ
122	當唔當	pawn	təŋ ³³ m̩ ²¹ təŋ ³³	təm ³¹ təŋ ³³	*təŋ məŋ

123	凍唔凍	cold	toj ³³ m̄ ²¹ toj ³³	tom ³¹ toj ³³	*toj moŋ
124	拖唔拖	pend	t ^h ɔ: ⁵⁵ m̄ ²¹ t ^h ɔ: ⁵⁵	t ^h ɔ:(ɔ)m ⁵¹ t ^h ɔ: ⁵⁵	*t ^h ɔ: mɔ:
125	睇唔睇	look at	t ^h ej ³⁵ m̄ ²¹ t ^h ej ³⁵	t ^h e(i)m ³⁵¹ t ^h ej ³⁵	*t ^h ej məj
126	剃唔剃	shave	t ^h ej ³³ m̄ ²¹ t ^h ej ³³	t ^h e(i)m ³¹ t ^h ej ³³	*t ^h ej məj
127	推唔推	push	t ^h əŋ ⁵⁵ m̄ ²¹ t ^h əŋ ⁵⁵	t ^h ə(ŋ)m ⁵¹ t ^h əŋ ⁵⁵	*t ^h əŋ məŋ
128	跳唔跳	jump	t ^h iw ³³ m̄ ²¹ t ^h iw ³³	t ^h i(u)m ³¹ t ^h iw ³³	*t ^h iw miw
129	挑唔挑	pick	t ^h iw ⁵⁵ m̄ ²¹ t ^h iw ⁵⁵	t ^h i(u)m ⁵¹ t ^h iw ⁵⁵	*t ^h iw miw
130	偷唔偷	steal	t ^h ew ⁵⁵ m̄ ²¹ t ^h ew ⁵⁵	t ^h e(u)m ⁵¹ t ^h ew ⁵⁵	*t ^h ew məw
131	投唔投	put in	t ^h ew ²¹ m̄ ²¹ t ^h ew ²¹	t ^h e(u)m ²¹ t ^h ew ²¹	*t ^h ew məw
132	逃唔逃	escape	t ^h ow ²¹ m̄ ²¹ t ^h ow ²¹	t ^h o(u)m ²¹ t ^h ow ²¹	*t ^h ow mow
133	吐唔吐	spit	t ^h ow ³³ m̄ ²¹ t ^h ow ³³	t ^h o(u)m ³¹ t ^h ow ³³	*t ^h ow mow
134	撻唔撻	steal	t ^h at ⁵ m̄ ²¹ t ^h at ⁵	t ^h am ⁵¹ t ^h at ⁵	*t ^h at mat
135	踢唔踢	kick	t ^h ek ³³ m̄ ²¹ t ^h ek ³³	t ^h em ³¹ t ^h ek ³³	*t ^h ek mək
136	剔唔剔	tick	t ^h ek ³³ m̄ ²¹ t ^h ek ³³	t ^h em ³¹ t ^h ek ³³	*t ^h ek mək
137	托唔托	entrust	t ^h ɔk ³³ m̄ ²¹ t ^h ɔk ³³	t ^h ɔm ³¹ t ^h ɔk ³³	*t ^h ɔk mək
138	禿唔禿	bald	t ^h ok ⁵⁵ m̄ ²¹ t ^h ok ⁵⁵	t ^h om ⁵¹ t ^h ok ⁵⁵	*t ^h ok mək
139	探唔探	visit	t ^h am ³³ m̄ ²¹ t ^h am ³³	t ^h am ³¹ mam ³³	*t ^h am məm
140	淡唔淡	tasteless	t ^h am ¹³ m̄ ²¹ t ^h am ¹³	t ^h am ¹³¹ mam ¹³	*t ^h am məm

141	沓唔沓	elicit laughter	t ^h em ³³ m̩ ²¹ t ^h em ³³	t ^h em ³¹ t ^h em ³³	*t ^h em mɛm
142	甜唔甜	sweet	t ^h im ²¹ m̩ ²¹ t ^h im ²¹	t ^h im ²¹ t ^h im ²¹	*t ^h im mim
143	攤唔攤	spread ou	t ^h an ⁵⁵ m̩ ²¹ t ^h an ⁵⁵	t ^h am ⁵¹ t ^h an ⁵⁵	*t ^h an man
144	嘆唔嘆	comfortable	t ^h an ³³ m̩ ²¹ t ^h an ³³	t ^h am ³¹ t ^h an ³³	*t ^h an man
145	彈唔彈	play (musical instrument)	t ^h an ²¹ m̩ ²¹ t ^h an ²¹	t ^h am ²¹ t ^h an ²¹	*t ^h an man
146	吞唔吞	swallow	t ^h en ⁵⁵ m̩ ²¹ t ^h en ⁵⁵	t ^h em ⁵¹ t ^h en ⁵⁵	*t ^h en mɛn
147	填唔填	fill in	t ^h in ²¹ m̩ ²¹ t ^h in ²¹	t ^h im ²¹ t ^h in ²¹	*t ^h in min
148	斷唔斷	disconnected	t ^h yn ¹³ m̩ ²¹ t ^h yn ¹³	t ^h ym ¹³¹ t ^h yn ¹³	*t ^h yn myn
149	藤唔藤	anxious	t ^h ɛŋ ²² m̩ ²¹ t ^h ɛŋ ²²	t ^h em ²¹ t ^h ɛŋ ²²	*t ^h ɛŋ mɛŋ
150	聽唔聽	listen	t ^h ɛŋ ⁵⁵ m̩ ²¹ t ^h ɛŋ ⁵⁵	t ^h em ⁵¹ t ^h ɛŋ ⁵⁵	*t ^h ɛŋ mɛŋ
151	停唔停	stop	t ^h ɛŋ ²¹ m̩ ²¹ t ^h ɛŋ ²¹	t ^h em ²¹ t ^h ɛŋ ²¹	*t ^h ɛŋ mɛŋ
152	燙唔燙	iron clothes	t ^h ɔŋ ³³ m̩ ²¹ t ^h ɔŋ ³³	t ^h ɔm ³¹ t ^h ɔŋ ³³	*t ^h ɔŋ mɔŋ
153	通唔通	thorough	t ^h oŋ ⁵⁵ m̩ ²¹ t ^h oŋ ⁵⁵	t ^h om ⁵¹ t ^h oŋ ⁵⁵	*t ^h oŋ moŋ
154	同唔同	together with	t ^h oŋ ²¹ m̩ ²¹ t ^h oŋ ²¹	t ^h om ²¹ t ^h oŋ ²¹	*t ^h oŋ moŋ
155	揸唔揸	grab	t ^s a: ⁵⁵ m̩ ²¹ t ^s a: ⁵⁵	t ^s a:(^o)m ⁵¹ t ^s a: ⁵⁵	*t ^s a: ma:
156	渣唔渣	inferior	t ^s a: ³⁵ m̩ ²¹ t ^s a: ³⁵	t ^s a:(^o)m ³⁵¹ t ^s a: ³⁵	*t ^s a: ma:
157	遮唔遮	cover	t ^s e: ⁵⁵ m̩ ²¹ t ^s e: ⁵⁵	t ^s e:(^o)m ⁵¹ t ^s e: ⁵⁵	*t ^s e: mɛ:
158	借唔借	borrow	t ^s e: ³³ m̩ ²¹ t ^s e: ³³	t ^s e:(^o)m ³¹ t ^s e: ³³	*t ^s e: mɛ:

159	謝唔謝	exhausted	tse: ²² m̩ ²¹ tse: ²²	tse(ɔ)m ²¹ tse: ²²	*tse: mɛ:
160	知唔知	know	tsi: ⁵⁵ m̩ ²¹ tsi: ⁵⁵	tsi(ɔ)m ⁵¹ tsi: ⁵⁵	*tsi: mi:
161	指唔指	point	tsi: ³⁵ m̩ ²¹ tsi: ³⁵	tsi(ɔ)m ³⁵¹ tsi: ³⁵	*tsi: mi:
162	紫唔紫	purple	tsi: ³⁵ m̩ ²¹ tsi: ³⁵	tsi(ɔ)m ³⁵¹ tsi: ³⁵	*tsi: mi:
163	阻唔阻	obstruct	tsɔ: ³⁵ m̩ ²¹ tsɔ: ³⁵	tsɔ(ɔ)m ³⁵¹ tsɔ: ³⁵	*tsɔ: mɔ:
164	煮唔煮	cook	tsy: ³⁵ m̩ ²¹ tsy: ³⁵	tsy(ɔ)m ³⁵¹ tsy: ³⁵	*tsy: my:
165	住唔住	live	tsy: ²² m̩ ²¹ tsy: ²²	tsy(ɔ)m ²¹ tsy: ²²	*tsy: my:
166	制唔制	willing	tsej ³³ m̩ ²¹ tsej ³³	tse(i)m ³¹ tsej ³³	*tsej məj
167	追唔追	chase	tseŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵	tse(ŋ)m ⁵¹ tseŋ ⁵⁵	*tseŋ məŋ
168	咀唔咀	kiss	tseŋ ³⁵ m̩ ²¹ tseŋ ³⁵	tse(ŋ)m ³⁵¹ tseŋ ³⁵	*tseŋ məŋ
169	聚唔聚	gather	tseŋ ²² m̩ ²¹ tseŋ ²²	tse(ŋ)m ²¹ tseŋ ²²	*tseŋ məŋ
170	走唔走	leave	tsew ³⁵ m̩ ²¹ tsew ³⁵	tse(u)m ³⁵¹ tsew ³⁵	*tsew məw
171	做唔做	do	tsow ²² m̩ ²¹ tsow ²²	tso(u)m ²¹ tsow ²²	*tsow mow
172	執唔執	pick up	tsep ⁵⁵ m̩ ²¹ tsep ⁵⁵	tsem ⁵¹ tsep ⁵⁵	*tsep məp
173	接唔接	pick up a person	tsip ³ m̩ ²¹ tsip ³	tsim ³¹ tsip ³	*tsip mip
174	摺唔摺	fold	tsip ³ m̩ ²¹ tsip ³	tsim ³¹ tsip ³	*tsip mip
175	∅ 唔 ∅	tickle	tsit ⁵ m̩ ²¹ tsit ⁵	tsim ⁵¹ tsit ⁵	*tsit mit
176	紮唔紮	tie up	tsat ³ m̩ ²¹ tsat ³	tsam ³¹ tsat ³	*tsat mat
177	折唔折	discount	tsit ³ m̩ ²¹ tsit ³	tsim ³¹ tsit ³	*tsit mit
178	截唔截	catch (a cab)	tsit ² m̩ ²¹ tsit ²	tsim ²¹ tsit ²	*tsit mit

179	啜唔啜	suck	tsyt ³ m̩ ²¹ tsyt ³	tsym ³¹ tsyt ³	*tsyt myt
180	側唔側	slanted	tsək ⁵ m̩ ²¹ tsək ⁵	tsəm ⁵¹ tsək ⁵	*tsək mək
181	織唔織	knit	tsek ⁵ m̩ ²¹ tsek ⁵	tsem ⁵¹ tsek ⁵	*tsek mek
182	直唔直	straight	tsek ² m̩ ²¹ tsek ²	tsem ²¹ tsek ²	*tsek mek
183	作唔作	fabricate	tsək ³ m̩ ²¹ tsək ³	tsəm ³¹ tsək ³	*tsək mək
184	捉唔捉	catch	tsok ⁵ m̩ ²¹ tsok ⁵	tsom ⁵¹ tsok ⁵	*tsok mok
185	著唔著	put on clothes	tsək ³ m̩ ²¹ tsək ³	tsəm ³¹ tsək ³	*tsək mək
186	擲唔擲	throw	tsak ² m̩ ²¹ tsak ²	tsam ²¹ tsak ²	*tsak mak
187	窄唔窄	narrow	tsak ³ m̩ ²¹ tsak ³	tsam ³¹ tsak ³	*tsak mak
188	斬唔斬	chop	tsam ³⁵ m̩ ²¹ tsam ³⁵	tsam ³⁵¹ tsam ³⁵	*tsam mam
189	斟唔斟	pour	tsəm ⁵⁵ m̩ ²¹ tsəm ⁵⁵	tsəm ⁵¹ tsəm ⁵⁵	*tsəm məm
190	浸唔浸	get baptised	tsəm ³³ m̩ ²¹ tsəm ³³	tsəm ³¹ tsəm ³³	*tsəm məm
191	枕唔枕	to sleep on	tsəm ³³ m̩ ²¹ tsəm ³³	tsəm ³¹ tsəm ³³	*tsəm məm
192	尖唔尖	pointed	tsim ⁵⁵ m̩ ²¹ tsim ⁵⁵	tsim ⁵¹ tsim ⁵⁵	*tsim mim
193	賺唔賺	earn	tsan ²² m̩ ²¹ tsan ²²	tsam ²¹ tsan ²²	tsan man
194	真唔真	real	tsən ⁵⁵ m̩ ²¹ tsən ⁵⁵	tsəm ⁵¹ tsən ⁵⁵	*tsən mən
195	剪唔剪	cut	tsin ³⁵ m̩ ²¹ tsin ³⁵	tsim ³⁵¹ tsin ³⁵	*tsin min
196	賤唔賤	despicable	tsin ²² m̩ ²¹ tsin ²²	tsim ²¹ tsin ²²	*tsin min
197	轉唔轉	rotate/ change	tsyn ³³ m̩ ²¹ tsyn ³³	tsym ³¹ tsyn ³³	*tsyn myn

198	專唔專	specialised	tsyn ⁵⁵ m̩ ²¹ tsyn ⁵⁵	tsym ⁵¹ tsyn ⁵⁵	*tsyn myn
199	憎唔憎	hate	tseŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵	tsem ⁵¹ tseŋ ⁵⁵	*tseŋ meŋ
200	精唔精	smart	tseŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵	tsem ⁵¹ tseŋ ⁵⁵	*tseŋ meŋ
201	正唔正	good	tseŋ ³³ m̩ ²¹ tseŋ ³³	tsem ³¹ tseŋ ³³	*tseŋ meŋ
202	精唔精	good at	tseŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵	tsem ⁵¹ tseŋ ⁵⁵	*tseŋ meŋ
203	整唔整	make	tseŋ ³⁵ m̩ ²¹ tseŋ ³⁵	tsem ³⁵¹ tseŋ ³⁵	*tseŋ meŋ
204	正唔正	righteous	tseŋ ³³ m̩ ²¹ tseŋ ³³	tsem ³¹ tseŋ ³³	*tseŋ meŋ
205	撞唔撞	bump into	tsəŋ ²² m̩ ²¹ tsəŋ ²²	tsəm ²¹ tsəŋ ²²	*tsəŋ məŋ
206	裝唔裝	peep	tsəŋ ⁵⁵ m̩ ²¹ tsəŋ ⁵⁵	tsəm ⁵¹ tsəŋ ⁵⁵	*tsəŋ məŋ
207	忠唔忠	loyal	tsəŋ ⁵⁵ m̩ ²¹ tsəŋ ⁵⁵	tsəm ⁵¹ tsəŋ ⁵⁵	*tsəŋ məŋ
208	中唔中	accurate	tsəŋ ³³ m̩ ²¹ tsəŋ ³³	tsəm ³¹ tsəŋ ³³	*tsəŋ məŋ
209	差唔差	bad	ts ^h a: ⁵⁵ m̩ ²¹ ts ^h a: ⁵⁵	ts ^h a(ɔ̃)m ⁵¹ ts ^h a: ⁵⁵	*ts ^h a: ma:
210	查唔查	investigate	ts ^h a: ²¹ m̩ ²¹ ts ^h a: ²¹	ts ^h a(ɔ̃)m ²¹ ts ^h a: ²¹	*ts ^h a: ma:
211	斜唔斜	slanting/ steep	ts ^h ɛ: ³³ m̩ ²¹ ts ^h ɛ: ³³	ts ^h ɛ(ɔ̃)m ³¹ ts ^h ɛ: ³³	*ts ^h ɛ: mɛ:
212	癡唔癡	crazy	ts ^h i: ⁵⁵ m̩ ²¹ ts ^h i: ⁵⁵	ts ^h i(ɔ̃)m ⁵¹ ts ^h i: ⁵⁵	*ts ^h i: mi:
213	遲唔遲	late	ts ^h i: ²¹ m̩ ²¹ ts ^h i: ²¹	ts ^h i(ɔ̃)m ²¹ ts ^h i: ²¹	*ts ^h i: mi:
214	坐唔坐	sit	ts ^h ɔ̃: ³⁵ m̩ ²¹ ts ^h ɔ̃: ³⁵	ts ^h ɔ̃(ɔ̃)m ³⁵¹ ts ^h ɔ̃: ³⁵	*ts ^h ɔ̃: mə:
215	儲唔儲	store	ts ^h y: ¹³ m̩ ²¹ ts ^h y: ¹³	ts ^h y(ɔ̃)m ¹³¹ ts ^h y: ¹³	*ts ^h y: my:
216	踩唔踩	step on	ts ^h aj ³⁵ m̩ ²¹ ts ^h aj ³⁵	ts ^h a(i)m ³⁵¹ ts ^h aj ³⁵	*ts ^h aj maj

217	淒唔淒	miserable	ts ^h ɛj ⁵⁵ m̩ ²¹ ts ^h ɛj ⁵⁵	ts ^h ɛ(i)m ⁵¹ ts ^h ɛj ⁵⁵	*ts ^h ɛj mɛj
218	睇唔睇	to show interest	ts ^h ɔj ³⁵ m̩ ²¹ ts ^h ɔj ³⁵	ts ^h ɔ(i)m ³⁵¹ ts ^h ɔj ³⁵	*ts ^h ɔj mɔj
219	吹唔吹	blow	ts ^h əu ⁵⁵ m̩ ²¹ ts ^h əu ⁵⁵	ts ^h ə(u)m ⁵¹ ts ^h əu ⁵⁵	*ts ^h əu məu
220	除唔除	take off	ts ^h əu ²¹ m̩ ²¹ ts ^h əu ²¹	ts ^h ə(u)m ²¹ ts ^h əu ²¹	*ts ^h əu məu
221	抄唔抄	copy	ts ^h a:w ⁵⁵ m̩ ²¹ ts ^h a:w ⁵⁵	ts ^h a(u)m ⁵¹ ts ^h a:w ⁵⁵	*ts ^h a:w ma:w
222	醜唔醜	ugly	ts ^h ɛw ³⁵ m̩ ²¹ ts ^h ɛw ³⁵	ts ^h ɛ(u)m ³⁵¹ ts ^h ɛw ³⁵	*ts ^h ɛw məw
223	臭唔臭	stinky	ts ^h ɛw ³³ m̩ ²¹ ts ^h ɛw ³³	ts ^h ɛ(u)m ³¹ ts ^h ɛw ³³	*ts ^h ɛw məw
224	籌唔籌	raise (fund)	ts ^h ɛw ²¹ m̩ ²¹ ts ^h ɛw ²¹	ts ^h ɛ(u)m ²¹ ts ^h ɛw ²¹	*ts ^h ɛw məw
225	嘈唔嘈	noisy	ts ^h ow ²¹ m̩ ²¹ ts ^h ow ²¹	ts ^h o(u)m ²¹ ts ^h ow ²¹	*ts ^h ow mow
226	燥唔燥	bad-tempered	ts ^h ow ³³ m̩ ²¹ ts ^h ow ³³	ts ^h o(u)m ³¹ ts ^h ow ³³	*ts ^h ow mow
227	擦唔擦	rub	ts ^h at ³ m̩ ²¹ ts ^h at ³	ts ^h am ³¹ ts ^h at ³	*ts ^h at mat
228	切唔切	cut up	ts ^h it ³ m̩ ²¹ ts ^h it ³	ts ^h im ³¹ ts ^h it ³	*ts ^h it mit
229	出唔出	go out	ts ^h ət ⁵ m̩ ²¹ ts ^h ət ⁵	ts ^h əm ⁵¹ ts ^h ət ⁵	*ts ^h ət mət
230	拆唔拆	demolish	ts ^h ak ³ m̩ ²¹ ts ^h ak ³	ts ^h am ³¹ ts ^h ak ³	*ts ^h ak mak
231	赤唔赤	painful	ts ^h ek ³ m̩ ²¹ ts ^h ek ³	ts ^h əm ³¹ ts ^h ek ³	*ts ^h ek mək
232	慘唔慘	poor	ts ^h am ³⁵ m̩ ²¹ ts ^h am ³⁵	ts ^h am ³⁵¹ ts ^h am ³⁵	*ts ^h am mam
233	嘅唔嘅	copious	ts ^h əm ³³ m̩ ²¹ ts ^h əm ³³	ts ^h əm ³¹ ts ^h əm ³³	*ts ^h əm ³¹ ts ^h əm
234	潛唔潛	scuba diving	ts ^h im ²¹ m̩ ²¹ ts ^h im ²¹	ts ^h im ²¹ ts ^h im ²¹	*ts ^h im ²¹ ts ^h im
235	殘唔殘	worn out	ts ^h an ²¹ m̩ ²¹ ts ^h an ²¹	ts ^h am ²¹ ts ^h an ²¹	*ts ^h an man

236	親唔親	familiar	ts ^h ɛn ⁵⁵ m̩ ²¹ ts ^h ɛn ⁵⁵	ts ^h ɛm ⁵¹ ts ^h ɛn ⁵⁵	*ts ^h ɛn mɛn
237	淺唔淺	shallow/ easy	ts ^h in ³⁵ m̩ ²¹ ts ^h in ³⁵	ts ^h im ³⁵¹ ts ^h in ³⁵	*ts ^h in min
238	前唔前	front	ts ^h in ²¹ m̩ ²¹ ts ^h in ²¹	ts ^h im ²¹ ts ^h in ²¹	*ts ^h in min
239	穿唔穿	make a hole	ts ^h yn ⁵⁵ m̩ ²¹ ts ^h yn ⁵⁵	ts ^h ym ⁵¹ ts ^h yn ⁵⁵	*ts ^h yn myn
240	蠢唔蠢	stupid	ts ^h ɛn ³⁵ m̩ ²¹ ts ^h ɛn ³⁵	ts ^h ɛm ³⁵¹ ts ^h ɛn ³⁵	*ts ^h ɛn mɛn
241	撐唔撐	support	ts ^h aŋ ³³ m̩ ²¹ ts ^h aŋ ³³	ts ^h am ³¹ ts ^h aŋ ³³	*ts ^h aŋ maŋ
242	青唔青	green	ts ^h ɛŋ ⁵⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵	ts ^h ɛm ⁵¹ ts ^h ɛŋ ⁵⁵	*ts ^h ɛŋ mɛŋ
243	請唔請	invite	ts ^h ɛŋ ³⁵ m̩ ²¹ ts ^h ɛŋ ³⁵	ts ^h ɛm ³⁵¹ ts ^h ɛŋ ³⁵	*ts ^h ɛŋ mɛŋ
244	清唔清	clear	ts ^h ɛŋ ⁵⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵	ts ^h ɛm ⁵¹ ts ^h ɛŋ ⁵⁵	*ts ^h ɛŋ mɛŋ
245	沖唔沖	flush	ts ^h oŋ ⁵⁵ m̩ ²¹ ts ^h oŋ ⁵⁵	ts ^h om ⁵¹ ts ^h oŋ ⁵⁵	*ts ^h oŋ moŋ
246	聰唔聰	intelligent	ts ^h oŋ ⁵⁵ m̩ ²¹ ts ^h oŋ ⁵⁵	ts ^h om ⁵¹ ts ^h oŋ ⁵⁵	*ts ^h oŋ moŋ
247	長唔長	long	ts ^h œŋ ²¹ m̩ ²¹ ts ^h œŋ ²¹	ts ^h œm ²¹ ts ^h œŋ ²¹	*ts ^h œŋ mœŋ
247	搶唔搶	snatch	ts ^h œŋ ³⁵ m̩ ²¹ ts ^h œŋ ³⁵	ts ^h œm ³⁵¹ ts ^h œŋ ³⁵	*ts ^h œŋ mœŋ
249	唱唔唱	sing	ts ^h œŋ ³³ m̩ ²¹ ts ^h œŋ ³³	ts ^h œm ³¹ ts ^h œŋ ³³	*ts ^h œŋ mœŋ
250	暢唔暢	happy	ts ^h œŋ ³³ m̩ ²¹ ts ^h œŋ ³³	ts ^h œm ³¹ ts ^h œŋ ³³	*ts ^h œŋ mœŋ
251	沙唔沙	creaky voice	sa: ⁵⁵ m̩ ²¹ sa: ⁵⁵	sa(:)m ⁵¹ sa: ⁵⁵	*sa: ma:
252	寫唔寫	write	se: ³⁵ m̩ ²¹ se: ³⁵	sa(:)m ³⁵¹ sa: ³⁵	*sa: ma:
253	卸唔卸	deny responsibility	se: ³³ m̩ ²¹ se: ³³	sa(:)m ³¹ sa: ³³	*sa: ma:

254	蛇唔蛇	sneak off	se: ²¹ m̩ ²¹ se: ²¹	sa(:)m ²¹ sa: ²¹	*sa: ma:
255	射唔射	shoot	se: ²² m̩ ²¹ se: ²²	sa(:)m ²¹ sa: ²²	*sa: ma:
256	撕唔撕	tear apart	si: ⁵⁵ m̩ ²¹ si: ⁵⁵	si(:)m ⁵¹ si: ⁵⁵	*si: mi:
257	試唔試	try	si: ³³ m̩ ²¹ si: ³³	si(:)m ³¹ si: ³³	*si: mi:
258	梳唔梳	comb	so: ⁵⁵ m̩ ²¹ so: ⁵⁵	so(:)m ⁵¹ so: ⁵⁵	*so: mo:
259	鎖唔鎖	lock	so: ³⁵ m̩ ²¹ so: ³⁵	so(:)m ³⁵¹ so: ³⁵	*so: mo:
260	輸唔輸	lose	sy: ⁵⁵ m̩ ²¹ sy: ⁵⁵	sy(:)m ⁵¹ sy: ⁵⁵	*sy: my:
261	薯唔薯	idiotic	sy: ²¹ m̩ ²¹ sy: ²¹	sy(:)m ²¹ sy: ²¹	*sy: my:
262	噍唔噍	waste	saj ⁵⁵ m̩ ²¹ saj ⁵⁵	sa(i)m ⁵¹ saj ⁵⁵	*saj maj
263	晒唔晒	dry in the sun	saj ³³ m̩ ²¹ saj ³³	sa(i)m ³¹ saj ³³	*saj maj
264	篩唔篩	sieve	səj ⁵⁵ m̩ ²¹ səj ⁵⁵	sə(i)m ⁵¹ səj ⁵⁵	*səj məj
265	洗唔洗	wash	səj ³⁵ m̩ ²¹ səj ³⁵	sə(i)m ³⁵¹ səj ³⁵	*səj məj
266	細唔細	small	səj ³³ m̩ ²¹ səj ³³	sə(i)m ³¹ səj ³³	*səj məj
267	死唔死	die	sej ³⁵ m̩ ²¹ sej ³⁵	se(i)m ³⁵¹ sej ³⁵	*sej mej
268	衰唔衰	wicked	səŋ ⁵⁵ m̩ ²¹ səŋ ⁵⁵	sə(ŋ)m ⁵¹ səŋ ⁵⁵	*səŋ məŋ
269	水唔水	inferior	səŋ ³⁵ m̩ ²¹ səŋ ³⁵	sə(ŋ)m ³⁵¹ səŋ ³⁵	*səŋ məŋ
270	哨唔哨		saw ³³ m̩ ²¹ saw ³³	sa(u)m ³¹ saw ³³	*saw maw
271	收唔收	receive	səw ⁵⁵ m̩ ²¹ səw ⁵⁵	sə(u)m ⁵¹ səw ⁵⁵	*səw məw
272	受唔受	accept	səw ²² m̩ ²¹ səw ²²	sə(u)m ²¹ səw ²²	*səw məw
273	燒唔燒	burn	siw ⁵⁵ m̩ ²¹ siw ⁵⁵	si(u)m ⁵¹ siw ⁵⁵	*siw miw

274	少唔少	little	siw ³⁵ m̩ ²¹ siw ³⁵	si(u)m ³⁵¹ siw ³⁵	*siw miw
275	掃唔掃	sweep	sow ³³ m̩ ²¹ sow ³³	so(u)m ³⁵¹ sow ³³	*sow mow
276	數唔數	count	sow ³⁵ m̩ ²¹ sow ³⁵	so(u)m ³⁵¹ sow ³⁵	*sow mow
277	蝕唔蝕	deficit	sit ² m̩ ²¹ sit ²	sim ²¹ sit ²	*sit mit
278	濕唔濕	wet	səp ⁵ m̩ ²¹ səp ⁵	səm ⁵¹ səp ⁵	*səp məp
279	殺唔殺	kill	sat ³ m̩ ²¹ sat ³	sam ³¹ sat ³	*sat mat
280	失唔失	lost	sət ⁵ m̩ ²¹ sət ⁵	səm ⁵¹ sət ⁵	*sət mət
281	實唔實	hard	sət ² m̩ ²¹ sət ²	səm ²¹ sət ²	*sət mət
282	塞唔塞	(traffic) jam	sək ⁵ m̩ ²¹ sək ⁵	səm ⁵¹ sək ⁵	*sək mək
283	錫唔錫	kiss	sek ³ m̩ ²¹ sek ³	sem ³¹ sek ³	*sek mək
284	識唔識	know	sek ⁵ m̩ ²¹ sek ⁵	sem ⁵¹ sek ⁵	*sek mək
285	食唔食	eat	sek ² m̩ ²¹ sek ²	sem ²¹ sek ²	*sek mək
286	索唔索	sexy	sək ³ m̩ ²¹ sək ³	səm ³¹ sək ³	*sək mək
287	宿唔宿	stink	sək ⁵ m̩ ²¹ sək ⁵	səm ⁵¹ sək ⁵	*sək mək
288	縮唔縮	shrink	sək ⁵ m̩ ²¹ sək ⁵	səm ⁵¹ sək ⁵	*sək mək
289	熟唔熟	familiar	sək ² m̩ ²¹ sək ²	səm ²¹ sək ²	*sək mək
290	削唔削	inferior	sək ³ m̩ ²¹ sək ³	səm ³¹ sək ³	*sək mək
291	深唔深	difficult	səm ⁵⁵ m̩ ²¹ səm ⁵⁵	səm ⁵¹ səm ⁵⁵	*səm məm
292	審唔審	have a trial	səm ³⁵ m̩ ²¹ səm ³⁵	səm ³¹ səm ³⁵	*səm məm
293	閃唔閃	shiny	sim ³⁵ m̩ ²¹ sim ³⁵	sim ³⁵¹ sim ³⁵	*sim mim

294	新唔新	new	sən ⁵⁵ m̩ ²¹ sən ⁵⁵	səm ⁵¹ sən ⁵⁵	*sən mən
295	神唔神	miraculous	sən ²¹ m̩ ²¹ sən ²¹	səm ²¹ sən ²¹	*sən mən
296	酸唔酸	sour	syn ⁵⁵ m̩ ²¹ syn ⁵⁵	sym ⁵¹ syn ⁵⁵	*syn myn
297	算唔算	count	syn ³³ m̩ ²¹ syn ³³	sym ³¹ syn ³³	*syn myn
298	信唔信	believe	sən ³³ m̩ ²¹ sən ³³	səm ³¹ sən ³³	*sən mən
299	順唔順	smooth	sən ²² m̩ ²¹ sən ²²	səm ²¹ sən ²²	*sən mən
300	生唔生	give birth to	saŋ ⁵⁵ m̩ ²¹ saŋ ⁵⁵	sam ⁵¹ saŋ ⁵⁵	*saŋ maŋ
301	省唔省	clean with rubbing	saŋ ³⁵ m̩ ²¹ saŋ ³⁵	sam ³⁵¹ saŋ ³⁵	*saŋ maŋ
302	醒唔醒	awake	seŋ ³⁵ m̩ ²¹ seŋ ³⁵	səm ³⁵¹ seŋ ³⁵	*seŋ meŋ
303	成唔成	accomplish	seŋ ²¹ m̩ ²¹ seŋ ²¹	səm ²¹ seŋ ²¹	*seŋ meŋ
304	醒唔醒	smart	seŋ ³⁵ m̩ ²¹ seŋ ³⁵	səm ³⁵¹ seŋ ³⁵	*seŋ meŋ
305	聖唔聖	holy	seŋ ³³ m̩ ²¹ seŋ ³³	səm ³¹ seŋ ³³	*seŋ meŋ
306	爽唔爽	frank/ open	sɔŋ ³⁵ m̩ ²¹ sɔŋ ³⁵	sɔm ³⁵¹ sɔŋ ³⁵	*sɔŋ mɔŋ
307	喪唔喪	crazy	sɔŋ ³³ m̩ ²¹ sɔŋ ³³	sɔm ³¹ sɔŋ ³³	*sɔŋ mɔŋ
308	鬆唔鬆	loose	soŋ ⁵⁵ m̩ ²¹ soŋ ⁵⁵	som ⁵¹ soŋ ⁵⁵	*soŋ moŋ
309	送唔送	give as a gift	soŋ ³³ m̩ ²¹ soŋ ³³	som ³¹ soŋ ³³	*soŋ moŋ
310	傷唔傷	hurt	sœŋ ⁵⁵ m̩ ²¹ sœŋ ⁵⁵	sœm ⁵¹ sœŋ ⁵⁵	*sœŋ mœŋ
311	想唔想	want	sœŋ ³⁵ m̩ ²¹ sœŋ ³⁵	sœm ³⁵¹ sœŋ ³⁵	*sœŋ mœŋ
312	上唔上	go up	sœŋ ¹³ m̩ ²¹ sœŋ ¹³	sœm ¹³¹ sœŋ ¹³	*sœŋ mœŋ

313	Ø 唔 Ø	aching	la: ³⁵ m̄ ²¹ la: ³⁵	la(ɔ)m ³⁵¹ la: ³⁵	*la: ma:
314	燻唔燻	embarrassed	lo: ³³ m̄ ²¹ lo: ³³	lo(ɔ)m ³¹ lo: ³³	*lo: mo:
315	拉唔拉	pull	laj ⁵⁵ m̄ ²¹ laj ⁵⁵	la(i)m ⁵¹ laj ⁵⁵	*laj maj
316	嚟唔嚟	come	ləj ²¹ m̄ ²¹ ləj ²¹	lə(i)m ²¹ ləj ²¹	*ləj məj
317	鬧唔鬧	scold	law ²² m̄ ²¹ law ²²	la(u)m ²¹ law ²²	*law maw
318	𦉳唔𦉳	angry	ləw ⁵⁵ m̄ ²¹ ləw ⁵⁵	lə(u)m ⁵¹ ləw ⁵⁵	*ləw məw
319	扭唔扭	twist	ləw ³⁵ m̄ ²¹ ləw ³⁵	lə(u)m ³⁵¹ ləw ³⁵	*ləw məw
320	流唔流	flow	ləw ²¹ m̄ ²¹ ləw ²¹	lə(u)m ²¹ ləw ²¹	*ləw məw
321	老唔老	old	low ¹³ m̄ ²¹ low ¹³	lo(u)m ¹³¹ low ¹³	*low mow
322	露唔露	reveal	low ²² m̄ ²¹ low ²²	lo(u)m ²¹ low ¹³	*low mow
323	凹唔凹	subsided	ləp ⁵ m̄ ²¹ ləp ⁵	ləm ⁵¹ ləp ⁵	*ləp məp
324	笠唔笠	cover	ləp ⁵ m̄ ²¹ ləp ⁵	ləm ⁵¹ ləp ⁵	*ləp məp
325	Ø 唔 Ø	sticky	ləp ² m̄ ²¹ ləp ²	ləm ²¹ ləp ²	*ləp məp
326	Ø 唔 Ø	hurt hands with heat	lat ² m̄ ²¹ lat ²	lam ²¹ lat ²	*lat mat
327	辣唔辣	spicy	lat ² m̄ ²¹ lat ²	lam ²¹ lat ²	*lat mat
328	裂唔裂	crack	lit ³ m̄ ²¹ lit ³	lim ³¹ lit ³	*lit mit
329	叻唔叻	smart	lək ⁵ m̄ ²¹ lək ⁵	ləm ⁵¹ lək ⁵	*lək mək
330	落唔落	go downward	lək ² m̄ ²¹ lək ²	ləm ²¹ lək ²	*lək mək

331	𢱵唔𢱵	play bowling	lok ⁵ m̄ ²¹ lok ⁵	lom ⁵¹ lok ⁵	*lok mok
332	綠唔綠	green	lok ² m̄ ²¹ lok ²	lom ²¹ lok ²	*lok mok
333	掠唔掠	rip one off	lœk ⁵ m̄ ²¹ lœk ⁵	lœm ⁵¹ lœk ⁵	*lœk mœk
334	攬唔攬	hug	lam ³⁵ m̄ ²¹ lam ³⁵	lam ³⁵¹ lam ³⁵	*lam mam
335	諗唔諗	think	lœm ³⁵ m̄ ²¹ lœm ³⁵	lœm ³⁵¹ lœm ³⁵	*lœm mœm
336	𦉳唔𦉳	sweet (in romance)	lœm ⁵⁵ m̄ ²¹ lœm ⁵⁵	lœm ⁵¹ lœm ⁵⁵	*lœm mœm
337	脰唔脰	soft	lœm ²¹ m̄ ²¹ lœm ²¹	lœm ²¹ lœm ²¹	*lœm mœm
338	黏唔黏	sticky	lim ⁵⁵ m̄ ²¹ lim ⁵⁵	lim ⁵¹ lim ⁵⁵	*lim mim
339	難唔難	difficult	lan ²¹ m̄ ²¹ lan ²¹	lam ²¹ lan ²¹	*lan man
340	爛唔爛	worn out	lan ²² m̄ ²¹ lan ²²	lam ²¹ lan ²²	*lan man
341	懶唔懶	lazy	lan ¹³ m̄ ²¹ lan ¹³	lam ¹³¹ lan ¹³	*lan man
342	連唔連	connected	lin ²¹ m̄ ²¹ lin ²¹	lim ²¹ lin ²¹	*lin min
343	暖唔暖	warm	lyn ¹³ m̄ ²¹ lyn ¹³	lym ¹³¹ lyn ¹³	*lyn myn
344	亂唔亂	messy	lyn ²² m̄ ²¹ lyn ²²	lym ²¹ lyn ²²	*lyn myn
345	靚唔靚	beautiful	leŋ ³³ m̄ ²¹ leŋ ³³	lœm ³¹ leŋ ³³	*leŋ meŋ
346	拎唔拎	bring along	leŋ ⁵⁵ m̄ ²¹ leŋ ⁵⁵	lœm ⁵¹ leŋ ⁵⁵	*leŋ meŋ
347	擰唔擰	open (the lid)	leŋ ³⁵ m̄ ²¹ leŋ ³⁵	lœm ³⁵¹ leŋ ³⁵	*leŋ meŋ
348	晾唔晾	dry in the air	loŋ ²² m̄ ²¹ loŋ ²²	lom ²¹ loŋ ²²	*loŋ moŋ
349	聾唔聾	deaf	loŋ ²¹ m̄ ²¹ loŋ ²¹	lom ²¹ loŋ ²¹	*loŋ moŋ

350	涼唔涼	cool	lœŋ ²¹ m̐ ²¹ lœŋ ²¹	lœm ²¹ lœŋ ²¹	*lœŋ mœŋ
351	娘唔娘	corny	lœŋ ⁵⁵ m̐ ²¹ lœŋ ⁵⁵	lœm ⁵¹ lœŋ ⁵⁵	*lœŋ mœŋ
352	野唔野	wild	jɛ: ¹³ m̐ ²¹ jɛ: ¹³	jɛ(ɔ)m ¹³¹ jɛ: ¹³	*jɛ: mɛ:
353	夜唔夜	late	jɛ: ²² m̐ ²¹ jɛ: ²²	jɛ(ɔ)m ²¹ jɛ: ²²	*jɛ: mɛ:
354	惹唔惹	irritate	jɛ: ¹³ m̐ ²¹ jɛ: ¹³	jɛ(ɔ)m ¹³¹ jɛ: ¹³	*jɛ: mɛ:
355	易唔易	easy	ji: ²² m̐ ²¹ ji: ²²	ji(ɔ)m ²¹ ji: ²²	*ji: mi:
356	醫唔醫	cure	ji: ⁵⁵ m̐ ²¹ ji: ⁵⁵	ji(ɔ)m ⁵¹ ji: ⁵⁵	*ji: mi:
357	移唔移	move	ji: ²¹ m̐ ²¹ ji: ²¹	ji(ɔ)m ²¹ ji: ²¹	*ji: mi:
358	癩唔癩	embarrassed	jy: ³⁵ m̐ ²¹ jy: ³⁵	jy(ɔ)m ³⁵¹ jy: ³⁵	*jy: my:
359	預唔預	save	jy: ²² m̐ ²¹ jy: ²²	jy(ɔ)m ²¹ jy: ²²	*jy: my:
360	戇唔戇	naughty	jɛj ¹³ m̐ ²¹ jɛj ¹³	jɛ(i)m ¹³¹ jɛj ¹³	*jɛj mɛj
361	憂唔憂	worry	jɛw ⁵⁵ m̐ ²¹ jɛw ⁵⁵	jɛ(u)m ⁵¹ jɛw ⁵⁵	*jɛw mɛw
362	油唔油	greasy	jɛw ²¹ m̐ ²¹ jɛw ²¹	jɛ(u)m ²¹ jɛw ²¹	*jɛw mɛw
363	幼唔幼	thin	jɛw ³³ m̐ ²¹ jɛw ³³	jɛ(u)m ³¹ jɛw ³³	*jɛw mɛw
364	入唔入	enter	jɛp ² m̐ ²¹ jɛp ²	jɛm ²¹ jɛp ²	*jɛp mɛp
365	醃唔醃	pickle	jip ³ m̐ ²¹ jip ³	jim ³¹ jip ³	*jip mip
366	熱唔熱	hot	jit ² m̐ ²¹ jit ²	jim ²¹ jit ²	*jit mit
367	益唔益	benefit	jek ⁵ m̐ ²¹ jek ⁵	jem ⁵¹ jek ⁵	*jek mek
368	逆唔逆	go against	jek ² m̐ ²¹ jek ²	jem ²¹ jek ²	*jek mek

369	郁唔郁	move	jok ⁵ m̄ ²¹ jok ⁵	jom ⁵¹ jok ⁵	*jok mok
370	弱唔弱	weak	jœk ² m̄ ²¹ jœk ²	jœm ²¹ jœk ²	*jœk mœk
372	陰唔陰	shady	jəm ⁵⁵ m̄ ²¹ jəm ⁵⁵	jəm ⁵¹ jəm ⁵⁵	*jəm məm
373	飲唔飲	drink	jəm ³⁵ m̄ ²¹ jəm ³⁵	jəm ³⁵¹ jəm ³⁵	*jəm məm
374	淫唔淫	erotic	jəm ²¹ m̄ ²¹ jəm ²¹	jəm ²¹ jəm ²¹	*jəm məm
375	厭唔厭	get fed up with	jim ³³ m̄ ²¹ jim ³³	jim ³¹ jim ³³	*jim mim
376	忍唔忍	tolerate	jən ³⁵ m̄ ²¹ jən ³⁵	jəm ³⁵¹ jən ³⁵	*jən mən
377	Ø 唔 Ø	sore/ tired	jyn ⁵⁵ m̄ ²¹ jyn ⁵⁵	jym ⁵¹ jyn ⁵⁵	*jyn myn
378	怨唔怨	blame	jyn ³³ m̄ ²¹ jyn ³³	jym ³¹ jyn ³³	*jyn myn
379	圓唔圓	round	jyn ²¹ m̄ ²¹ jyn ²¹	jym ²¹ jyn ²¹	*jyn myn
380	軟唔軟	soft	jyn ¹³ m̄ ²¹ jyn ¹³	jym ¹³¹ jyn ¹³	*jyn myn
381	贏唔贏	win	jeŋ ²¹ m̄ ²¹ jeŋ ²¹	jəm ²¹ jeŋ ²¹	*jeŋ meŋ
382	應唔應	should	jeŋ ⁵⁵ m̄ ²¹ jeŋ ⁵⁵	jəm ⁵¹ jeŋ ⁵⁵	*jeŋ meŋ
383	影唔影	take a photo	jeŋ ³⁵ m̄ ²¹ jeŋ ³⁵	jəm ³⁵¹ jeŋ ³⁵	*jeŋ meŋ
384	應唔應	accurate	jeŋ ³³ m̄ ²¹ jeŋ ³³	jəm ³¹ jeŋ ³³	*jeŋ meŋ
385	認唔認	admit	jeŋ ²² m̄ ²¹ jeŋ ²²	jəm ²¹ jeŋ ²²	*jeŋ meŋ
386	勇唔勇	courageous	joŋ ¹³ m̄ ²¹ joŋ ¹³	jom ¹³¹ joŋ ¹³	*joŋ moŋ
387	加唔加	add	ka: ⁵⁵ m̄ ²¹ ka: ⁵⁵	ka(:)m ⁵¹ ka: ⁵⁵	*ka: ma:
388	假唔假	fake	ka: ³⁵ m̄ ²¹ ka: ³⁵	ka(:)m ³⁵¹ ka: ³⁵	*ka: ma:

389	嫁唔嫁	marry	ka: ³³ m̄ ²¹ ka: ³³	ka(:)m ³¹ ka: ³³	*ka: ma:
390	估唔估	guess	ku: ³⁵ m̄ ²¹ ku: ³⁵	ku(:)m ³⁵¹ ku: ³⁵	*ku: mu:
391	戒唔戒	get rid of	kaj ³³ m̄ ²¹ kaj ³³	ka(i)m ³¹ kaj ³³	*kaj maj
392	界唔界	cut	kaj ³³ m̄ ²¹ kaj ³³	ka(i)m ³¹ kaj ³³	*kaj maj
393	計唔計	count	kɛj ³³ m̄ ²¹ kɛj ³³	kɛ(i)m ³¹ kɛj ³³	*kɛj mɛj
394	忌唔忌	avoid	kej ²² m̄ ²¹ kej ²²	ke(i)m ²¹ kej ²²	*kej mej
395	∅ 唔 ∅	gay	kej ⁵⁵ m̄ ²¹ kej ⁵⁵	ke(i)m ⁵¹ kej ⁵⁵	*kej mej
396	改唔改	correct	kɔj ³⁵ m̄ ²¹ kɔj ³⁵	kɔ(i)m ³⁵¹ kɔj ³⁵	*kɔj mɔj
397	搞唔搞	set up	kaw ³⁵ m̄ ²¹ kaw ³⁵	ka(u)m ³⁵¹ kaw ³⁵	*kaw maw
398	教唔教	teach	kaw ³³ m̄ ²¹ kaw ³³	ka(u)m ³¹ kaw ³³	*kaw maw
399	夠唔夠	enough	kɛw ³³ m̄ ²¹ kɛw ³³	kɛ(u)m ³¹ kɛw ³³	*kɛw mɛw
400	救唔救	save	kɛw ³³ m̄ ²¹ kɛw ³³	kɛ(u)m ³¹ kɛw ³³	*kɛw mɛw
401	舊唔舊	old	kɛw ²² m̄ ²¹ kɛw ²²	kɛ(u)m ²¹ kɛw ²²	*kɛw mɛw
402	叫唔叫	shout/ call	kiw ³³ m̄ ²¹ kiw ³³	ki(u)m ³¹ kiw ³³	*kiw miw
403	高唔高	tall	kow ⁵⁵ m̄ ²¹ kow ⁵⁵	ko(u)m ⁵¹ kow ⁵⁵	*kow mow
404	告唔告	sue	kow ³³ m̄ ²¹ kow ³³	ko(u)m ³¹ kow ³³	*kow mow
405	急唔急	hurry	kɛp ⁵ m̄ ²¹ kɛp ⁵	kɛm ⁵¹ kɛp ⁵	*kɛp mɛp
406	𦉳唔𦉳	peep	kɛp ² m̄ ²¹ kɛp ²	kɛm ²¹ kɛp ²	*kɛp mɛp
407	澀唔澀	bitter	kip ³ m̄ ²¹ kip ³	kim ³¹ kip ³	*kip mip
408	吉唔吉	stingy	kɛt ⁵ m̄ ²¹ kɛt ⁵	kɛm ⁵¹ kɛt ⁵	*kɛt mɛt

409	Ø 唔 Ø	grumble	ket ² m̄ ²¹ ket ²	kem ²¹ ket ²	*ket met
410	結唔結	get married	kit ³ m̄ ²¹ kit ³	kim ³¹ kit ³	*kit mit
411	Ø 唔 Ø	thick (liquid)	kit ² m̄ ²¹ kit ²	kim ²¹ kit ²	*kit mit
412	割唔割	cut	kət ³³ m̄ ²¹ kət ³³	kəm ³¹ kət ³	*kət mət
413	隔唔隔	quarantine	kak ³³ m̄ ²¹ kak ³³	kam ³¹ kak ³	*kak mak
414	激唔激	annoying	kek ⁵⁵ m̄ ²¹ kek ⁵⁵	kem ⁵¹ kek ⁵	*kek mek
415	谷唔谷 (氣) (氣)	annoying	kok ⁵⁵ m̄ ²¹ kok ⁵⁵	kom ⁵¹ kok ⁵	*kok mok
416	焗唔焗	stuffy	kok ² m̄ ²¹ kok ²	kom ²¹ kok ²	*kok mok
417	減唔減	deduct	kam ³⁵ m̄ ²¹ kam ³⁵	kam ³⁵¹ kam ³⁵	*kam mam
418	敢唔敢	dare	kem ³⁵ m̄ ²¹ kem ³⁵	kem ³⁵¹ kem ³⁵	*kem mem
419	Ø 唔 Ø	push (button)	kem ²² m̄ ²¹ kem ²²	kem ²¹ kem ²²	*kem mem
420	奸唔奸	cunning	kan ⁵⁵ m̄ ²¹ kan ⁵⁵	kam ⁵¹ kan ⁵⁵	*kan man
421	揀唔揀	choose	kan ³⁵ m̄ ²¹ kan ³⁵	kam ³⁵¹ kan ³⁵	*kan man
422	間唔間	put a space between	kan ³³ m̄ ²¹ kan ³³	kam ³¹ kan ³³	*kan man
423	跟唔跟	follow	kən ⁵⁵ m̄ ²¹ kən ⁵⁵	kem ⁵¹ kən ⁵⁵	*kən men
424	緊唔緊	care about	kən ³⁵ m̄ ²¹ kən ³⁵	kem ³⁵¹ kən ³⁵	*kən men
425	見唔見	see	kin ³³ m̄ ²¹ kin ³³	kim ³¹ kin ³³	*kin min
426	堅唔堅	real	kin ⁵⁵ m̄ ²¹ kin ⁵⁵	kim ⁵¹ kin ⁵⁵	*kin min

427	乾唔乾	dry	kən ⁵⁵ m̩ ²¹ kən ⁵⁵	kəm ⁵¹ kən ⁵⁵	*kən mən
428	驚唔驚	scared	keŋ ⁵⁵ m̩ ²¹ keŋ ⁵⁵	kem ⁵¹ keŋ ⁵⁵	*keŋ meŋ
429	警唔警	alert	keŋ ³⁵ m̩ ²¹ keŋ ³⁵	kem ³⁵¹ keŋ ³⁵	*keŋ meŋ
430	講唔講	tell	kəŋ ³⁵ m̩ ²¹ kəŋ ³⁵	kəm ³⁵¹ kəŋ ³⁵	*kəŋ məŋ
431	供唔供	pay installment	koŋ ⁵⁵ m̩ ²¹ koŋ ⁵⁵	kom ⁵¹ koŋ ⁵⁵	*koŋ moŋ
432	騎唔騎	ride on	k ^h ɛ: ²¹ m̩ ²¹ k ^h ɛ: ²¹	k ^h ɛ:(^o)m ²¹ k ^h ɛ: ²¹	*k ^h ɛ: mɛ:
433	奇唔奇	strange	k ^h ej ²¹ m̩ ²¹ k ^h ej ²¹	k ^h e(i)m ²¹ k ^h ej ²¹	*k ^h ej mej
434	企唔企	stand	k ^h ej ¹³ m̩ ²¹ k ^h ej ¹³	k ^h e(i)m ¹³¹ k ^h ej ¹³	*k ^h ej mej
435	拘唔拘	mind	k ^h əʊ ⁵⁵ m̩ ²¹ k ^h əʊ ⁵⁵	k ^h ə(ʊ)m ⁵¹ k ^h əʊ ⁵⁵	*k ^h əʊ məʊ
436	溝唔溝	pick up (girls)	k ^h ɛw ⁵⁵ m̩ ²¹ k ^h ɛw ⁵⁵	k ^h ɛ(u)m ⁵¹ k ^h ɛw ⁵⁵	*k ^h ɛw məw
437	嚟唔嚟	coincidental	k ^h iw ³⁵ m̩ ²¹ k ^h iw ³⁵	k ^h i(u)m ³⁵¹ k ^h iw ³⁵	*k ^h iw miw
438	及唔及	can be compared to	k ^h ɛp ² m̩ ²¹ kɛp ²	k ^h ɛm ²¹ k ^h ɛp ²	*k ^h ɛp məp
439	咳唔咳	cough	k ^h ɛt ⁵ m̩ ²¹ k ^h ɛt ⁵	k ^h ɛm ⁵¹ k ^h ɛt ⁵	*k ^h ɛt mət
440	Ø 唔 Ø	knotted	k ^h ek ⁵ m̩ ²¹ k ^h ek ⁵	k ^h ɛm ⁵¹ k ^h ek ⁵	*k ^h ek mek
441	曲唔曲	bent	k ^h ok ⁵ m̩ ²¹ k ^h ok ⁵	k ^h om ⁵¹ k ^h ok ⁵	*k ^h ok mok
442	鉗唔鉗	pick up	k ^h im ²¹ m̩ ²¹ k ^h im ²¹	k ^h im ²¹ k ^h im ²¹	*k ^h im mim
443	近唔近	close	k ^h ɛn ¹³ m̩ ²¹ k ^h ɛn ¹³	k ^h ɛm ¹³¹ k ^h ɛn ¹³	*k ^h ɛn mən
444	勤唔勤	hard-working	k ^h ɛn ²¹ m̩ ²¹ k ^h ɛn ²¹	k ^h ɛm ²¹ k ^h ɛn ²¹	*k ^h ɛn mən

445	啃唔啃	swallow	k ^h ɛŋ ³⁵ m̄ ²¹ k ^h ɛŋ ³⁵	k ^h ɛm ³⁵¹ k ^h ɛŋ ³⁵	*k ^h ɛŋ mɛŋ
446	傾唔傾	chat	k ^h ɛŋ ⁵⁵ m̄ ²¹ k ^h ɛŋ ⁵⁵	k ^h ɛm ⁵¹ k ^h ɛŋ ⁵⁵	*k ^h ɛŋ mɛŋ
447	∅ 唔 ∅	solidify	k ^h ɛŋ ²¹ m̄ ²¹ k ^h ɛŋ ²¹	k ^h ɛm ²¹ k ^h ɛŋ ²¹	*k ^h ɛŋ mɛŋ
448	強唔強	strong	k ^h œŋ ²¹ m̄ ²¹ k ^h œŋ ²¹	k ^h œm ²¹ k ^h œŋ ²¹	*k ^h œŋ mœŋ
449	寡唔寡	insipid	k ^w a: ³⁵ m̄ ²¹ k ^w a: ³⁵	k ^w a(:)m ³⁵¹ k ^w a: ³⁵	*k ^w a: ma:
450	掛唔掛	hang	k ^w a: ³³ m̄ ²¹ k ^w a: ³³	k ^w a(:)m ³¹ k ^w a: ³³	*k ^w a: ma:
451	過唔過	cross	k ^w ɔ: ³³ m̄ ²¹ k ^w ɔ: ³³	k ^w ɔ(:)m ³¹ k ^w ɔ: ³³	*k ^w ɔ: mɔ:
452	乖唔乖	obedient	k ^w aj ⁵⁵ m̄ ²¹ k ^w aj ⁵⁵	k ^w a(i)m ⁵¹ k ^w aj ⁵⁵	*k ^w aj maj
453	怪唔怪	strange	k ^w aj ³³ m̄ ²¹ k ^w aj ³³	k ^w a(i)m ³¹ k ^w aj ³³	*k ^w aj maj
454	貴唔貴	expensive	k ^w ɛj ³³ m̄ ²¹ k ^w ɛj ³³	k ^w ɛ(i)m ³¹ k ^w ɛj ³³	*k ^w ɛj mɛj
455	刮唔刮	scrape	k ^w at ³ m̄ ²¹ k ^w at ³³	k ^w am ³¹ k ^w at ³	*k ^w at mat
456	倔唔倔	stubborn	k ^w ɛt ² m̄ ²¹ k ^w ɛt ²	k ^w ɛm ²¹ k ^w ɛt ²	*k ^w ɛt mɛt
457	掘唔掘	dig	k ^w ɛt ² m̄ ²¹ k ^w ɛt ²	k ^w ɛm ²¹ k ^w ɛt ²	*k ^w ɛt mɛt
458	關唔關	related	k ^w an ⁵⁵ m̄ ²¹ k ^w an ⁵⁵	k ^w am ⁵¹ k ^w an ⁵⁵	k ^w an man
459	慣唔慣	accustomed	k ^w an ³³ m̄ ²¹ k ^w an ³³	k ^w am ³¹ k ^w an ³³	k ^w an man
460	滾唔滾	boiled	k ^w ɛn ³⁵ m̄ ²¹ k ^w ɛn ³⁵	k ^w ɛm ³⁵¹ k ^w ɛn ³⁵	*k ^w ɛn mɛn
461	管唔管	manage	k ^w un ³⁵ m̄ ²¹ k ^w un ³⁵	k ^w um ³⁵¹ k ^w un ³⁵	*k ^w un mun
462	光唔光	bright	k ^w ɔŋ ⁵⁵ m̄ ²¹ k ^w ɔŋ ⁵⁵	k ^w ɔm ⁵¹ k ^w ɔŋ ⁵⁵	*k ^w ɔŋ mɔŋ

463	誇唔誇	exaggerated	k ^{wh} a: ⁵⁵ m̩ ²¹ k ^{wh} a: ⁵⁵	k ^{wh} a(:)m ⁵¹ k ^{wh} a: ⁵⁵	*k ^{wh} a: ma:
464	虧唔虧	deficit	k ^{wh} ɛj ⁵⁵ m̩ ²¹ k ^{wh} ɛj ⁵⁵	k ^{wh} ɛ(i)m ⁵¹ k ^{wh} ɛj ⁵⁵	*k ^{wh} ɛj mɛj
465	困唔困	caged	k ^{wh} ɛn ³³ m̩ ²¹ k ^{wh} ɛn ³³	k ^{wh} ɛm ³¹ k ^{wh} ɛn ³³	*k ^{wh} ɛn mɛn
466	話唔話	criticize	wa: ²² m̩ ²¹ wa: ²²	wa(:)m ²¹ wa: ²²	*wa: ma:
467	∅ 唔∅	untidy	we: ³⁵ m̩ ²¹ we: ³⁵	we(:)m ³⁵¹ we: ³⁵	*we: mɛ:
468	壞唔壞	bad	waj ²² m̩ ²¹ waj ²²	wa:(i)m ²¹ waj ²²	*waj maj
469	會唔會	will be	wuɥ ¹³ m̩ ²¹ wuɥ ¹³	wu(ɥ)m ¹³¹ wuɥ ¹³	*wuɥ muɥ
470	威唔威	awe-inspiring	wɛj ⁵⁵ m̩ ²¹ wɛj ⁵⁵	wɛ(i)m ⁵¹ wɛj ⁵⁵	*wɛj mɛj
471	挖唔挖	dig	wat ³ m̩ ²¹ wat ³	wam ³¹ wat ³	*wat mat
472	滑唔滑	smooth	wat ² m̩ ²¹ wat ²	wam ²¹ wat ²	*wat mat
473	屈唔屈	do wrong to someone	wɛt ⁵ m̩ ²¹ wɛt ⁵	wɛm ⁵¹ wɛt ⁵	*wɛt mɛt
474	畫唔畫	draw	wak ² m̩ ²¹ wak ²	wam ²¹ wak ²	*wak mak
475	玩唔玩	play	wan ³⁵ m̩ ²¹ wan ³⁵	wam ³⁵¹ wan ³⁵	*wan man
476	還唔還	return	wan ²¹ m̩ ²¹ wan ²¹	wam ²¹ wan ²¹	*wan man
477	搵唔搵	look for	wɛn ³⁵ m̩ ²¹ wɛn ³⁵	wɛm ³⁵¹ wɛn ³⁵	*wɛn mɛn
478	勻唔勻	evenly distributed	wɛn ²¹ m̩ ²¹ wɛn ²¹	wɛm ²¹ wɛn ²¹	*wɛn mɛn
479	暈唔暈	faint	wɛn ²¹ m̩ ²¹ wɛn ²¹	wɛm ²¹ wɛn ²¹	*wɛn mɛn

480	運唔運	transfer	wen ²² m̄ ²¹ wen ²²	wəm ²¹ wen ²²	*wen men
481	換唔換	exchange	wun ²² m̄ ²¹ wun ²²	wum ²¹ wun ²²	*wun mun
482	黃唔黃	yellow	wɔŋ ²¹ m̄ ²¹ wɔŋ ²¹	wɔm ²¹ wɔŋ ²¹	*wɔŋ mɔŋ
483	旺唔旺	crowded	wɔŋ ²² m̄ ²¹ wɔŋ ²²	wɔm ²¹ wɔŋ ²²	*wɔŋ mɔŋ
484	蝦唔蝦	bully	ha: ⁵⁵ m̄ ²¹ ha: ⁵⁵	ha(:)m ⁵¹ ha: ⁵⁵	ha: ⁵⁵ ma: ⁵⁵
485	下唔下	go down	ha: ²² m̄ ²¹ ha: ²²	ha(:)m ²¹ ha: ²²	ha: ²² ma: ²²
486	可唔可	able	hɔ: ³⁵ m̄ ²¹ hɔ: ³⁵	hɔ(:)m ³⁵¹ hɔ: ³⁵	hɔ: ³⁵ mɔ: ³⁵
487	係唔係	be	hɛj ²² m̄ ²¹ hɛj ²²	hɛ(i)m ²¹ hɛj ²²	hɛj ²² mɛj ²²
488	起唔起	build	hej ³⁵ m̄ ²¹ hej ³⁵	he(i)m ³⁵¹ hej ³⁵	hej ³⁵ mej ³⁵
489	開唔開	open	hɔj ⁵⁵ m̄ ²¹ hɔj ⁵⁵	hɔ(i)m ⁵¹ hɔj ⁵⁵	hɔj ⁵⁵ mɔj ⁵⁵
490	害唔害	harm	hɔj ²² m̄ ²¹ hɔj ²²	hɔ(i)m ²¹ hɔj ²²	hɔj ²² mɔj ²²
491	去唔去	go	həu ³³ m̄ ²¹ həu ³³	hə(u)m ³¹ həu ³³	həu ³³ məu ³³
492	考唔考	take a test	haw ³⁵ m̄ ²¹ haw ³⁵	ha(u)m ³⁵¹ haw ³⁵	haw ³⁵ maw ³⁵
493	孝唔孝	pious	haw ³³ m̄ ²¹ haw ³³	ha(u)m ³¹ haw ³³	haw ³³ maw ³³
494	姣唔姣	coquettish	haw ²¹ m̄ ²¹ haw ²¹	ha(u)m ²¹ haw ²¹	haw ²¹ maw ²¹
495	厚唔厚	thick	hɛw ¹³ m̄ ²¹ hɛw ¹³	hɛ(u)m ¹³¹ hɛw ¹³	hɛw ¹³ mɛw ¹³
496	囂唔囂	arrogant	hiw ⁵⁵ m̄ ²¹ hiw ⁵⁵	hi(u)m ⁵¹ hiw ⁵⁵	hiw ⁵⁵ miw ⁵⁵
497	曉唔曉	know	hiw ³⁵ m̄ ²¹ hiw ³⁵	hi(u)m ³⁵¹ hiw ³⁵	hiw ³⁵ miw ³⁵
498	好唔好	good	how ³⁵ m̄ ²¹ how ³⁵	ho(u)m ³⁵¹ how ³⁵	how ³⁵ mow ³⁵

499	好唔好	interested in	how ³³ m̩ ²¹ how ³³	ho(u)m ³¹ how ³³	how ³³ mow ³³
500	豪唔豪	generous	how ²¹ m̩ ²¹ how ²¹	ho(u)m ²¹ how ²¹	how ²¹ mow ²¹
501	怯唔怯	timid	hip ³ m̩ ²¹ hip ³	him ³¹ hip ³	hip ³ mip ³
502	恰唔恰	bully	hɛp ⁵ m̩ ²¹ hɛp ⁵	hɛm ⁵¹ hɛp ⁵	hɛp ⁵ mɛp ⁵
503	合唔合	match	hɛp ² m̩ ²¹ hɛp ²	hɛm ²¹ hɛp ²	hɛp ² mɛp ²
504	協唔協	coordinate	hip ³ m̩ ²¹ hip ³	him ³¹ hip ³	hip ³ mip ³
505	乞唔乞	beg	hɛt ⁵ m̩ ²¹ hɛt ⁵	hɛm ⁵¹ hɛt ⁵	hɛt ⁵ mɛt ⁵
506	嚇唔嚇	frighten	hak ³ m̩ ²¹ hak ³	ham ³¹ hak ³	hak ³ mak ³
507	黑唔黑	dark	hɛk ⁵ m̩ ²¹ hɛk ⁵	hɛm ⁵¹ hɛk ⁵	hɛk ⁵ mɛk ⁵
508	學唔學	learn	hɔk ² m̩ ²¹ hɔk ²	hɔm ²¹ hɔk ²	hɔk ² mɔk ²
509	喊唔喊	cry	ham ³³ m̩ ²¹ ham ³³	ham ³¹ ham ³³	ham ³³ mam ³³
510	鹹唔鹹	salty	ham ²¹ m̩ ²¹ ham ²¹	ham ²¹ ham ²¹	ham ²¹ mam ²¹
511	含唔含	contain	hɛm ²¹ m̩ ²¹ hɛm ²¹	hɛm ²¹ hɛm ²¹	hɛm ²¹ mɛm ²¹
512	謙唔謙	modest	him ⁵⁵ m̩ ²¹ him ⁵⁵	him ⁵¹ him ⁵⁵	him ⁵⁵ mim ⁵⁵
513	欠唔欠	owe	him ³³ m̩ ²¹ him ³³	him ³¹ him ³³	him ³³ mim ³³
514	勸唔勸	convince	hyn ³³ m̩ ²¹ hyn ³³	hym ³¹ hyn ³³	hyn ³³ myn ³³
515	慳唔慳	frugal	han ⁵⁵ m̩ ²¹ han ⁵⁵	ham ⁵¹ han ⁵⁵	han ⁵⁵ man ⁵⁵
516	恨唔恨	hate	hɛn ²² m̩ ²¹ hɛn ²²	hɛm ²¹ hɛn ²²	hɛn ²² mɛn ²²
517	痕唔痕	itchy	hɛn ²¹ m̩ ²¹ hɛn ²¹	hɛm ²¹ hɛn ²¹	hɛn ²¹ mɛn ²¹
518	寒唔寒	chilly	hɔn ²¹ m̩ ²¹ hɔn ²¹	hɔm ²¹ hɔn ²¹	hɔn ²¹ mɔn ²¹

519	行唔行	walk	haŋ ²¹ m̩ ²¹ haŋ ²¹	ham ²¹ haŋ ²¹	haŋ ²¹ maŋ ²¹
520	肯唔肯	willing	hɛŋ ³⁵ m̩ ²¹ hɛŋ ³⁵	hɛm ³⁵¹ hɛŋ ³⁵	hɛŋ ³⁵ mɛŋ ³⁵
521	輕唔輕	light (weight)	hɛŋ ⁵⁵ m̩ ²¹ hɛŋ ⁵⁵	hem ⁵¹ hɛŋ ⁵⁵	hɛŋ ⁵⁵ mɛŋ ⁵⁵
522	Ø 唔 Ø	hot/ angry	hɛŋ ³³ m̩ ²¹ hɛŋ ³³	hem ³¹ hɛŋ ³³	hɛŋ ³³ mɛŋ ³³
523	興唔興	popular	hɛŋ ⁵⁵ m̩ ²¹ hɛŋ ⁵⁵	hem ⁵¹ hɛŋ ⁵⁵	hɛŋ ⁵⁵ mɛŋ ⁵⁵
524	空唔空	empty	hoŋ ⁵⁵ m̩ ²¹ hoŋ ⁵⁵	hom ⁵¹ hoŋ ⁵⁵	hoŋ ⁵⁵ moŋ ⁵⁵
525	兇唔兇	fierce	hoŋ ⁵⁵ m̩ ²¹ hoŋ ⁵⁵	hom ⁵¹ hoŋ ⁵⁵	hoŋ ⁵⁵ moŋ ⁵⁵
526	紅唔紅	red	hoŋ ²¹ m̩ ²¹ hoŋ ²¹	hom ²¹ hoŋ ²¹	hoŋ ²¹ moŋ ²¹
527	香唔香	fragrant	hœŋ ⁵⁵ m̩ ²¹ hœŋ ⁵⁵	hœm ⁵¹ hœŋ ⁵⁵	hœŋ ⁵⁵ mœŋ ⁵⁵
528	響唔響	loud	hœŋ ³⁵ m̩ ²¹ hœŋ ³⁵	hœm ³⁵¹ hœŋ ³⁵	hœŋ ³⁵ mœŋ ³⁵
529	啞唔啞	mute	a: ³⁵ m̩ ²¹ a: ³⁵	ʔa(:)m ³⁵¹ ʔa: ³⁵	ʔa: ³⁵ ma: ³⁵
530	餓唔餓	hungry	ɔ: ²² m̩ ²¹ ɔ: ²²	ʔɔ(:)m ²¹ ʔɔ: ²²	ʔɔ: ²² mɔ: ²²
531	捱唔捱	have a hard time	aj ²¹ m̩ ²¹ aj ²¹	ʔa(i)m ²¹ ʔaj ²¹	ʔaj ²¹ maj ²¹
532	噏唔噏	scream	aj ³³ m̩ ²¹ aj ³³	ʔa(i)m ³¹ ʔaj ³³	ʔaj ³³ maj ³³
533	危唔危	dangerous	ɛj ²¹ m̩ ²¹ ɛj ²¹	ʔɛ(i)m ²¹ ʔɛj ²¹	ʔɛj ²¹ mɛj ²¹
534	矮唔矮	short	ɛj ³⁵ m̩ ²¹ ɛj ³⁵	ʔɛ(i)m ³⁵¹ ʔɛj ³⁵	ʔɛj ³⁵ mɛj ³⁵
535	愛唔愛	love	ɔj ³³ m̩ ²¹ ɔj ³³	ʔɔ(i)m ³¹ ʔɔj ³³	ʔɔj ³³ mɔj ³³
536	滷唔滷	cook (soup)	aw ²¹ m̩ ²¹ aw ²¹	ʔa(u)m ²¹ ʔaw ²¹	ʔaw ²¹ maw ²¹
537	拗唔拗	argue	aw ³³ m̩ ²¹ aw ³³	ʔa(u)m ³¹ ʔaw ³³	ʔaw ³³ maw ³³

538	嘔唔嘔	vomit	ɐw ³⁵ m̩ ²¹ ɐw ³⁵	ʔɐ(u)m ³⁵¹ ʔɐw ³⁵	ʔɐw ³⁵ mɛw ³⁵
539	噏唔噏	utter	ɐp ⁵ m̩ ²¹ ɐp ⁵	ʔɐm ⁵¹ ʔɐp ⁵	ʔɐp ⁵ mɛp ⁵
540	押唔押	catch	at ³ m̩ ²¹ at ³	ʔam ³¹ ʔat ³	ʔat ³ mat ³
541	壓唔壓	stink	at ³ m̩ ²¹ at ³	ʔam ³¹ ʔat ³	ʔat ³ mat ³
542	愕唔愕	surprised	ɔk ² m̩ ²¹ ɔk ²	ʔɔk ²¹ mɔk ²	ʔɔk ² mɔk ²
543	惡唔惡	fierce	ɔk ³ m̩ ²¹ ɔk ³	ʔɔk ³¹ mɔk ³	ʔɔk ³ mɔk ³
544	啱唔啱	correct	am ⁵⁵ m̩ ²¹ am ⁵⁵	ʔam ⁵¹ ʔam ⁵⁵	ʔam ⁵⁵ mam ⁵⁵
545	∅ 唔 ∅	to cover up	ɐm ³⁵ m̩ ²¹ ɐm ³⁵	ʔɐm ³⁵¹ ʔɐm ³⁵	ʔɐm ³⁵ mɛm ³⁵
546	暗唔暗	dim	ɐm ³³ m̩ ²¹ ɐm ³³	ʔɐm ³¹ ʔɐm ³³	ʔɐm ³³ mɛm ³³
547	晏唔晏	late	an ³³ m̩ ²¹ an ³³	ʔam ³¹ ʔan ³³	ʔan ³³ man ³³
548	𠵼唔𠵼	skinny	ɛn ⁵⁵ m̩ ²¹ ɛn ⁵⁵	ʔɛn ⁵¹ ʔɛn ⁵⁵	ʔɛn ⁵⁵ mɛn ⁵⁵
549	安唔安	safe/ peaceful	ɔn ⁵⁵ m̩ ²¹ ɔn ⁵⁵	ʔɔm ⁵¹ ʔɔn ⁵⁵	ʔɔn ⁵⁵ mɔn ⁵⁵
550	硬唔硬	hard	aŋ ²² m̩ ²¹ aŋ ²²	ʔam ²¹ ʔaŋ ²²	ʔaŋ ²² maŋ ²²
551	∅ 唔 ∅	earsore	ɛŋ ³⁵ m̩ ²¹ ɛŋ ³⁵	ʔɛm ³⁵¹ ʔɛŋ ³⁵	ʔɛŋ ³⁵ mɛŋ ³⁵
552	戇唔戇	idiotic	ɔŋ ²² m̩ ²¹ ɔŋ ²²	ʔɔm ²¹ ʔɔŋ ²²	ʔɔŋ ²² mɔŋ ²²

APPENDIX II

Transcription of σ_1 - m^{21} - σ_2 - σ_3 phrases

Remarks:

1. The tone of illegal syllable contraction is not shown because such contraction is impermissible under any circumstances regardless of tonal behavior.
2. A syllable without a corresponding Chinese character is indicated as \emptyset .

Item no.	Chinese Charac- -ters	English Gloss (X-or-not)	Citation	σ_1 - m^{21} contraction	m^{21} - σ_2 contraction
1	霸唔 霸度	tyrannical	pa: ³³ m ²¹ pa: ³³ tow ²²	pa(:)m ³¹ pa: ³³ tow ²²	*pa: ma: tow
2	包唔 包含	include	paw ⁵⁵ m ²¹ paw ⁵⁵ hem ²¹	pa(u)m ⁵¹ paw ⁵⁵ hem ²¹	*paw maw hem
3	爆唔 爆發	explode	paw ³³ m ²¹ paw ³³ fat ³	pa(u)m ³¹ paw ³³ fat ³	*paw maw fat
4	背唔 背負	carry	puq ¹³ m ²¹ puq ¹³ fu: ²²	pu(ɥ)m ¹³¹ puq ¹³ fu: ²²	*puq muq fu:
5	標唔 標緻	pretty	piw ⁵⁵ m ²¹ piw ⁵⁵ tsi: ³³	pi(u)m ⁵¹ piw ⁵⁵ tsi: ³³	*piw miw tsi:
6	避唔 避忌	taboo	pej ²² m ²¹ pej ²² kej ²²	pe(i)m ²¹ pej ²² kej ²²	*pej mej kej
7	補唔 補充	supplement	pow ³⁵ m ²¹ pow ³⁵ ts ^h oŋ ⁵⁵	po(u)m ³⁵¹ pow ³⁵ ts ^h oŋ ⁵⁵	*pow mow ts ^h oŋ
8	保唔 保護	protect	pow ³⁵ m ²¹ pow ³⁵ wu: ²²	po(u)m ³⁵¹ pow ³⁵ wu: ²²	*pow mow wu:
9	報唔 報服	revenge	pow ³³ m ²¹ pow ³³ fok ²	po(u)m ³¹ pow ³³ fok ²	*pow mow fok

10	暴唔 暴露	expose	pow ²² m̩ ²¹ pow ²² low ²²	po(u)m ²¹ pow ²¹ low ²²	*pow mow low
11	捕唔 捕捉	catch	pow ²² m̩ ²¹ pow ²² tsok ⁵	po(u)m ²¹ pow ²² tsok ⁵	*pow mow tsok
12	叛唔 叛逆	delinquent	pun ²² m̩ ²¹ pun ²² jek ²	pum ²¹ pun ²² jek ²	*pun mun jek
13	搬唔 搬遷	move	pun ⁵⁵ m̩ ²¹ pun ⁵⁵ ts ^h in ⁵⁵	pum ⁵¹ pun ⁵⁵ ts ^h in ⁵⁵	*pun mun ts ^h in
14	幫唔 幫忙	help	pɔŋ ⁵⁵ m̩ ²¹ pɔŋ ⁵⁵ mɔŋ ²¹	pɔm ⁵¹ pɔŋ ⁵⁵ mɔŋ ²¹	*pɔŋ mɔŋ mɔŋ
15	八唔 八卦	nosy	pat ³ m̩ ²¹ pat ³ k ^w a: ³³	pam ³¹ pat ³ k ^w a: ³³	*pat mat k ^w a:
16	別唔 別緻	exquisite	pit ² m̩ ²¹ pit ² tsi: ³³	pim ²¹ pit ² tsi: ³³	*pit mit tsi: ³
17	逼唔 逼迫	prosecute	pek ⁵ m̩ ²¹ pek ⁵ pak ⁵	pem ⁵¹ pek ⁵ pak ⁵	*pek mek pak
18	搏唔 搏殺	dedicated to work	pɔk ³ m̩ ²¹ pɔk ³ sat ³	pɔm ³¹ pɔk ³ sat ³	*pɔk mɔk sat
19	薄唔 薄弱	weak	pɔk ² m̩ ²¹ pɔk ² jœk ²	pɔm ²¹ pɔk ² jœk ²	*pɔk mɔk jœk
20	破唔 破壞	damage	p ^h ɔ: ³³ m̩ ²¹ p ^h ɔ: ³³ waj ²²	p ^h ɔ:(ɔ)m ³¹ p ^h ɔ: ³³ waj ²²	*p ^h ɔ: mɔ: waj
21	破唔 破裂	crack	p ^h ɔ: ³³ m̩ ²¹ p ^h ɔ: ³³ lit ³	p ^h ɔ:(ɔ)m ³¹ p ^h ɔ: ³³ lit ³	*p ^h ɔ: mɔ: lit
22	破唔 破爛	worn out	p ^h ɔ: ³³ m̩ ²¹ p ^h ɔ: ³³ lan ²²	p ^h ɔ:(ɔ)m ³¹ p ^h ɔ: ³³ lan ²²	*p ^h ɔ: mɔ: lan
23	派唔 派發	deliver	p ^h aj ³³ m̩ ²¹ p ^h aj ³³ fat ³³	p ^h a(i)m ³¹ p ^h aj ³³ fat ³³	*p ^h aj maj fat
24	排唔 排列	list	p ^h aj ²¹ m̩ ²¹ p ^h aj ²¹ lit ²²	p ^h a(i)m ²¹ p ^h aj ²¹ lit ²²	*p ^h aj maj lit
25	配唔 配合	match	p ^h uɥ ³³ m̩ ²¹ p ^h uɥ ³³ hɛp ²	p ^h u(ɥ)m ³¹ p ^h uɥ ³³ hɛp ²	*p ^h uɥ muɥ hɛp
26	賠唔 賠償	compensate	p ^h uɥ ²¹ m̩ ²¹ p ^h uɥ ²¹ sœŋ ²¹	p ^h u(ɥ)m ²¹ p ^h uɥ ²¹ sœŋ ²¹	*p ^h uɥ muɥ sœŋ
27	佩唔 佩戴	put on	p ^h uɥ ³³ m̩ ²¹ p ^h uɥ ³³ taj ³³	p ^h u(ɥ)m ³¹ p ^h uɥ ³³ taj ³³	*p ^h uɥ muɥ taj
28	飄唔 飄逸	graceful	p ^h iw ⁵⁵ m̩ ²¹ p ^h iw ⁵⁵ jɛt ²²	p ^h i(u)m ⁵¹ p ^h iw ⁵⁵ jɛt ²²	*p ^h iw miw jɛt

29	頻唔 頻密	frequent	p ^h en ²¹ m̩ ²¹ p ^h en ²¹ met ²²	p ^h em ²¹ p ^h en ²¹ met ²²	*p ^h en mən met
30	編唔 編織	knit	p ^h in ⁵⁵ m̩ ²¹ p ^h in ⁵⁵ tsek ⁵	p ^h im ⁵¹ p ^h in ⁵⁵ tsek ⁵	*p ^h in min tsek
31	偏唔 偏袒	bias	p ^h in ⁵⁵ m̩ ²¹ p ^h in ⁵⁵ t ^h an ³⁵	p ^h im ⁵¹ p ^h in ⁵⁵ t ^h an ³⁵	*p ^h in min t ^h an
32	平唔 平淡	ordinary	p ^h ej ²¹ m̩ ²¹ p ^h ej ²¹ tam ²²	p ^h em ²¹ p ^h ej ²¹ tam ²²	*p ^h ej mej tam
33	化唔 化妝	make up	fa: ³³ m̩ ²¹ fa: ³³ tsəŋ ⁵⁵	fa(:)m ³¹ fa: ³³ tsəŋ ⁵⁵	*fa: ma: tsəŋ
34	火唔 火爆	bad tempered	fə: ³⁵ m̩ ²¹ fə: ³⁵ paw ³³	fə(:)m ³⁵¹ fə: ³⁵ paw ³³	*fə: mə: paw
35	火唔 火燙	hot	fə: ³⁵ m̩ ²¹ fə: ³⁵ t ^h əŋ ³³	fə(:)m ³⁵¹ fə: ³⁵ t ^h əŋ ³³	*fə: mə: t ^h əŋ
36	符唔 符合	match	fu: ²¹ m̩ ²¹ fu: ²¹ həp ²	fu(:)m ²¹ fu: ²¹ həp ²	*fu: mu: həp
37	苦唔 苦澀	bitter	fu: ³⁵ m̩ ²¹ fu: ³⁵ kip ³	fu(:)m ³⁵¹ fu: ³⁵ kip ³	*fu: mu: kip
38	負唔 負擔	carry	fu: ²² m̩ ²¹ fu: ²² tam ⁵⁵	fu(:)m ²¹ fu: ²² tam ⁵⁵	*fu: mu: tam
39	富唔 富裕	rich	fu: ³³ m̩ ²¹ fu: ³³ jy: ²²	fu(:)m ³¹ fu: ³³ jy: ²²	*fu: mu: jy:
40	快唔 快捷	quick	faj ³³ m̩ ²¹ faj ³³ tsit ³	fa(i)m ³¹ faj ³³ tsit ³	*faj maj tsit
41	廢唔 廢柴	useless	fəj ³³ m̩ ²¹ fəj ³³ ts ^h aj ²¹	fə(i)m ³¹ fəj ³³ ts ^h aj ²¹	*fəj mej ts ^h aj
42	飛唔 飛翔	fly	fəj ⁵⁵ m̩ ²¹ fəj ⁵⁵ ts ^h əŋ ²¹	fə(i)m ⁵¹ fəj ⁵⁵ ts ^h əŋ ²¹	*fəj mej ts ^h əŋ
43	肥唔 肥胖	fat	fəj ²¹ m̩ ²¹ fəj ²¹ pun ²²	fə(i)m ²¹ fəj ²¹ pun ²²	*fəj mej pun
44	返唔 返歸	return	fan ⁵⁵ m̩ ²¹ fan ⁵⁵ k ^w ej ⁵⁵	fam ⁵¹ fan ⁵⁵ k ^w ej ⁵⁵	*fan man k ^w ej
45	煩唔 煩躁	bad tempered	fan ²¹ m̩ ²¹ fan ²¹ ts ^h ow ³³	fam ²¹ fan ²¹ ts ^h ow ³³	*fan man ts ^h ow
46	分唔 分離	separate	fən ⁵⁵ m̩ ²¹ fən ⁵⁵ lej ²¹	fəm ⁵¹ fən ⁵⁵ lej ²¹	*fən mən lej
47	封唔 封建	feudal	fəŋ ⁵⁵ m̩ ²¹ fəŋ ⁵⁵ kin ³³	fom ⁵¹ fəŋ ⁵⁵ kin ³³	*fəŋ moŋ kin

48	發唔 發問	ask	fat ³ m̄ ²¹ fat ³ men ²²	fam ³¹ fat ³ men ²²	*fat mat men
49	發唔 發達	get rich	fat ³ m̄ ²¹ fat ³ tat ²	fam ³¹ fat ³ tat ²	*fat mat tat
50	發唔 發掘	dig	fat ³ m̄ ²¹ fat ³ k ^w et ²	fam ³¹ fat ³ k ^w et ²	*fat mat k ^w et
51	闊唔 闊落	wide	fut ³ m̄ ²¹ fut ³ lok ²	fum ³¹ fut ³ lok ²	*fut mut lok
52	服唔 服從	succumb	fok ² m̄ ²¹ fok ² ts ^h oŋ ²¹	fom ²¹ fok ² ts ^h oŋ ²¹	*fok mok ts ^h oŋ
53	麻唔 麻痺	numb	ma: ²¹ m̄ ²¹ ma: ²¹ pej ³³	ma(:)m ²¹ ma: ²¹ pej ³³	*ma: ma: pej
54	磨唔 磨蝕	worn out	mə: ²¹ m̄ ²¹ mə: ²¹ sit ²	mə(:)m ²¹ mə: ²¹ sit ²	*mə: mə: sit
55	磨唔 磨擦	rub	mə: ²¹ m̄ ²¹ mə: ²¹ ts ^h at ³	mə(:)m ²¹ mə: ²¹ ts ^h at ³	*mə: mə: ts ^h at
56	Ø 唔 Ø 躑	irritated	məŋ ³⁵ m̄ ²¹ məŋ ³⁵ tsəŋ ³⁵	məm ³⁵¹ məŋ ³⁵ tsəŋ ³⁵	*məŋ məŋ tsəŋ
57	明唔 明曉	understand	məŋ ²¹ m̄ ²¹ məŋ ²¹ hiw ³⁵	məm ²¹ məŋ ²¹ hiw ³⁵	*məŋ məŋ hiw
58	明唔 明白	understand	məŋ ²¹ m̄ ²¹ məŋ ²¹ pak ²	məm ²¹ məŋ ²¹ pak ²	*məŋ məŋ pak
59	忙唔 忙碌	busy	məŋ ²¹ m̄ ²¹ məŋ ²¹ lok ⁵	məm ²¹ məŋ ²¹ lok ³	*məŋ məŋ lok
60	懵唔 懵懂	ignorant	məŋ ³⁵ m̄ ²¹ məŋ ³⁵ toŋ ³⁵	məm ³⁵¹ məŋ ³⁵ toŋ ³⁵	*məŋ məŋ toŋ
61	滅唔 滅絕	annihilate	mit ² m̄ ²¹ mit ² tsyt ²²	mim ²¹ mit ² tsyt ²²	*mit mit tsyt
62	剝唔 剝削	exploit	mək ⁵ m̄ ²¹ mək ⁵ sək ³	məm ⁵¹ mək ⁵ sək ³	*mək mək sək
63	木唔 木獨	idle	mok ² m̄ ²¹ mok ² tok ²	məm ²¹ mok ² tok ²	*mok mok tok
64	打唔 打探	hear about	ta: ³⁵ m̄ ²¹ ta: ³⁵ t ^h am ³³	ta(:)m ³⁵¹ ta: ³⁵ t ^h am ³³	*ta: ma: t ^h am
65	打唔 打掃	sweep	ta: ³⁵ m̄ ²¹ ta: ³⁵ sow ³³	ta(:)m ³⁵¹ ta: ³⁵ sow ³³	*ta: ma: sow

66	打唔 打交	fight	ta: ³⁵ m̩ ²¹ ta: ³⁵ kaw ⁵⁵	ta(ɔ)m ³⁵¹ ta: ³⁵ kaw ⁵⁵	*ta: ma: kaw
67	墮唔 墮落	fall from virtue	tɔ: ²² m̩ ²¹ tɔ: ²² lɔk ²	tɔ(ɔ)m ²¹ tɔ: ²² lɔk ²	*tɔ: mɔ: lɔk
68	特唔 特別	special	tɛk ² m̩ ²¹ tɛk ² pit ²	tɛm ²¹ tɛk ² pit ²	*tɛk mɛk pit
69	毒唔 毒辣	poisonous	tok ² m̩ ²¹ tok ² lat ²	tom ²¹ tok ² lat ²	*tok mok lat
70	敦唔 敦厚	sincere	tɛn ⁵⁵ m̩ ²¹ tɛn ⁵⁵ hɛw ¹³	tɛm ⁵¹ tɛn ⁵⁵ hɛw ¹³	*tɛn mɛn hɛw
71	堵唔 堵塞	jam	tow ³⁵ m̩ ²¹ tow ³⁵ sɛk ⁵	to(u)m ³⁵¹ tow ³⁵ sɛk ⁵	*tow mow sɛk
72	癲唔 癲狂	crazy	tin ⁵⁵ m̩ ²¹ tin ⁵⁵ k ^{wh} ɔŋ ²¹	tim ⁵¹ tin ⁵⁵ k ^{wh} ɔŋ ²¹	*tin min k ^{wh} ɔŋ
73	短唔 短小	short	tyn ³⁵ m̩ ²¹ tyn ³⁵ siw ³⁵	tym ³⁵¹ tyn ³⁵ siw ³⁵	*tyn myn siw
74	跳唔 跳躍	jump	t ^h iw ³³ m̩ ²¹ t ^h iw ³³ jɛk ³	t ^h i(u)m ³¹ t ^h iw ³³ jɛk ³	*t ^h iw miw jɛk
75	挑唔 挑剔	critical	t ^h iw ⁵⁵ m̩ ²¹ t ^h iw ⁵⁵ t ^h ɛk ⁵	t ^h i(u)m ⁵¹ t ^h iw ⁵⁵ t ^h ɛk ⁵	*t ^h iw miw t ^h ɛk
76	偷唔 偷竊	theft	t ^h ɛw ⁵⁵ m̩ ²¹ t ^h ɛw ⁵⁵ sit ³	t ^h ɛ(u)m ⁵¹ t ^h ɛw ⁵⁵ sit ³	*t ^h ɛw mɛw sit
77	投唔 投入	be into	t ^h ɛw ²¹ m̩ ²¹ t ^h ɛw ²¹ jɛp ²	t ^h ɛ(u)m ²¹ t ^h ɛw ²¹ jɛp ²	*t ^h ɛw mɛw jɛp
78	逃唔 逃脫	escape	t ^h ow ²¹ m̩ ²¹ t ^h ow ²¹ t ^h yt ³	t ^h o(u) ²¹ t ^h ow ²¹ t ^h yt ³	*t ^h ow mow t ^h yt
79	托唔 托付	entrust	t ^h ɔk ³³ m̩ ²¹ t ^h ɔk ³³ fu: ²²	t ^h ɔm ³¹ t ^h ɔk ³³ fu: ²²	*t ^h ɔk mɔk fu:
80	疼唔 疼錫	care about	t ^h ɔŋ ³³ m̩ ²¹ t ^h ɔŋ ³³ sɛk ³	t ^h om ³³ t ^h ɔŋ ³³ sɛk ³	*t ^h ɔŋ mɔŋ sɛk
81	甜唔 甜蜜	sweet	t ^h im ²¹ m̩ ²¹ t ^h im ²¹ mɛt ²	t ^h im ²¹ t ^h im ²¹ mɛt ²	*t ^h im mim mɛt
82	停唔 停止	stop	t ^h ɛŋ ²¹ m̩ ²¹ t ^h ɛŋ ²¹ tsi: ³⁵	t ^h em ²¹ t ^h ɛŋ ²¹ tsi: ³⁵	*t ^h ɛŋ mɛŋ tsi:
83	渣唔 渣豆	inferior	tɜa: ³⁵ m̩ ²¹ tɜa: ³⁵ tɛw ³⁵	tɜa(ɔ)m ²¹ tɜa: ³⁵ tɛw ³⁵	*tɜa: ma: tɛw

84	遮唔 遮蓋	cover	tse: ⁵⁵ m̩ ²¹ tse: ⁵⁵ k ^h ɔj ³³	tse(ɔ)m ⁵¹ tse: ⁵⁵ k ^h ɔj ³³	*tse: mɛ: k ^h ɔj
85	知唔 知道	know	tsi: ⁵⁵ m̩ ²¹ tsi: ⁵⁵ tow ³³	tsi(ɔ)m ⁵¹ tsi: ⁵⁵ tow ³³	*tsi: mi: tow
86	指唔 指點	point	tsi: ³⁵ m̩ ²¹ tsi: ³⁵ tim ³⁵	tsi(ɔ)m ³⁵¹ tsi: ³⁵ tim ³⁵	*tsi: mi: tim
87	支唔 支撐	support	tsi: ⁵⁵ m̩ ²¹ tsi: ⁵⁵ ts ^h aŋ ³³	tsi(ɔ)m ⁵¹ tsi: ⁵⁵ ts ^h aŋ ³³	*tsi: mi: ts ^h aŋ
88	阻唔 阻礙	obstruct	tsɔ: ³⁵ m̩ ²¹ tsɔ: ³⁵ ʔɔj ²²	tsɔ(ɔ)m ³⁵¹ tsɔ: ³⁵ ʔɔj ²²	*tsɔ: mɔ: ʔɔj
89	擠唔 擠壓	squeeze	tsɛj ⁵⁵ m̩ ²¹ tsɛj ⁵⁵ ʔat ³	tse(i)m ⁵¹ tsɛj ⁵⁵ ʔat ³	*tsɛj mɛj ʔat
90	追唔 追求	pursue	tseŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵ k ^w ɛw ²¹	tse(ŋ)m ⁵¹ tseŋ ⁵⁵ k ^w ɛw ²¹	*tseŋ mɛŋ k ^w ɛw
91	造唔 造作	fabricate	tsow ²² m̩ ²¹ tsow ²² tsɔk ³	tso(u)m ²¹ tsow ²² tsɔk ³	*tsow mow tsɔk
92	浸唔 浸淫	soaked	tsem ³³ m̩ ²¹ tsem ³³ jɛm ²¹	tsem ³¹ tsem ³³ jɛm ²¹	*tsem mɛm jɛm
93	尖唔 尖銳	sharp	tsim ⁵⁵ m̩ ²¹ tsim ⁵⁵ jɛŋ ²²	tsim ⁵¹ tsim ⁵⁵ jɛŋ ²²	*tsim mim jɛŋ
94	真唔 真實	real	tsɛn ⁵⁵ m̩ ²¹ tsɛn ⁵⁵ sɛt ²	tsem ⁵¹ tsɛn ⁵⁵ sɛt ²	*tsɛn mɛn sɛt
95	專唔 專業	specialised	tsyn ⁵⁵ m̩ ²¹ tsyn ⁵⁵ jip ²	tsym ⁵¹ tsyn ⁵⁵ jip ²	*tsyn myn jip
96	裝唔 裝扮	disguise as	tsɔŋ ⁵⁵ m̩ ²¹ tsɔŋ ⁵⁵ pan ²²	tsɔm ⁵¹ tsɔŋ ⁵⁵ pan ²²	*tsɔŋ mɔŋ pan
97	忠唔 忠誠	loyal	tsɔŋ ⁵⁵ m̩ ²¹ tsɔŋ ⁵⁵ sɛŋ ²¹	tsom ⁵¹ tsɔŋ ⁵⁵ sɛŋ ²¹	*tsɔŋ mɔŋ sɛŋ
98	中唔 中肯	to the point	tsɔŋ ⁵⁵ m̩ ²¹ tsɔŋ ⁵⁵ hɛŋ ³⁵	tsom ⁵¹ tsɔŋ ⁵⁵ hɛŋ ³⁵	*tsɔŋ mɔŋ hɛŋ
99	憎唔 憎惡	hate	tsɛŋ ⁵⁵ m̩ ²¹ tsɛŋ ⁵⁵ wu: ³³	tsem ⁵¹ tsɛŋ ⁵⁵ wu: ³³	*tsɛŋ mɛŋ wu:
100	憎唔 憎恨	hate	tsɛŋ ⁵⁵ m̩ ²¹ tsɛŋ ⁵⁵ hɛn ²²	tsem ⁵¹ tsɛŋ ⁵⁵ hɛn ²²	*tsɛŋ mɛŋ hɛn
101	增唔 增加	increase	tsɛŋ ⁵⁵ m̩ ²¹ tsɛŋ ⁵⁵ ka: ⁵⁵	tsem ⁵⁵ tsɛŋ ⁵⁵ ka: ⁵⁵	*tsɛŋ mɛŋ ka:
102	精唔 精叻	smart	tsɛŋ ⁵⁵ m̩ ²¹ tsɛŋ ⁵⁵ lɛk ⁵⁵	tsem ⁵¹ tsɛŋ ⁵⁵ lɛk ⁵⁵	*tsɛŋ mɛŋ lɛk
103	精唔 精通	good at	tsɛŋ ⁵⁵ m̩ ²¹ tsɛŋ ⁵⁵ toŋ ⁵⁵	tsem ⁵¹ tsɛŋ ⁵⁵ toŋ ⁵⁵	*tsɛŋ mɛŋ toŋ

104	整唔 整理	organize	tsej ³⁵ m̩ ²¹ tsej ³⁵ lej ¹³	tsem ³⁵¹ tsej ³⁵ lej ¹³	*tsej meŋ lej
105	正唔 正義	righteous	tsej ³³ m̩ ²¹ tsej ³³ ji: ²²	tsem ³¹ tsej ³³ ji: ²²	*tsej meŋ ji:
106	習唔 習慣	accustomed	tsap ² m̩ ²¹ tsap ² k ^w an ³³	tsam ²¹ tsap ² k ^w an ³³	*tsap map k ^w an
107	執唔 執拾	tidy up	tsəp ⁵⁵ m̩ ²¹ tsəp ⁵⁵ səp ²	tsem ⁵¹ tsəp ⁵⁵ səp ²	*tsəp məp səp
108	接唔 接納	accept	tsip ³ m̩ ²¹ tsip ³ lap ²	tsim ³¹ tsip ³ lap ²	*tsip mip lap
109	接唔 接受	accept	tsip ³ m̩ ²¹ tsip ³ səw ²²	tsim ³¹ tsip ³ səw ²²	*tsip mip səw
110	直唔 直接	straight forward	tsek ² m̩ ²¹ tsek ² tsip ³	tsem ²¹ tsek ² tsip ³	*tsek mek tsip
111	足唔 足夠	enough	tsok ⁵ m̩ ²¹ tsok ⁵ kəw ³³	tsom ⁵¹ tsok ⁵ kəw ³³	*tsok mok kəw
112	痴唔 痴纏	attached	ts ^h i: ⁵⁵ m̩ ²¹ ts ^h i: ⁵⁵ ts ^h in ²¹	ts ^h i:(ɿ)m ⁵¹ ts ^h i: ⁵⁵ ts ^h in ²¹	*ts ^h i: mi: ts ^h in
113	儲唔 儲存	store	ts ^h y: ¹³ m̩ ²¹ ts ^h y: ¹³ ts ^h yn ²¹	ts ^h y:(ɿ)m ¹³¹ ts ^h y: ¹³ ts ^h yn ²¹	*ts ^h y: my: ts ^h yn
114	調唔 調查	investigate	t ^h iw ²¹ m̩ ²¹ t ^h iw ²¹ ts ^h a: ²¹	t ^h i(u)m ²¹ t ^h iw ²¹ ts ^h a: ²¹	*t ^h iw miw ts ^h a:
115	潮唔 潮濕	humid	ts ^h iw ²¹ m̩ ²¹ ts ^h iw ²¹ səp ⁵	ts ^h i(u)m ²¹ ts ^h iw ²¹ səp ⁵	*ts ^h iw miw səp
116	淒唔 淒美	romantic	ts ^h ej ⁵⁵ m̩ ²¹ ts ^h ej ⁵⁵ mej ¹³	ts ^h e(i)m ⁵¹ ts ^h ej ⁵⁵ mej ¹³	*ts ^h ej məj mej
117	吹唔 吹噓	boast	ts ^h əŋ ⁵⁵ m̩ ²¹ ts ^h əŋ ⁵⁵ həŋ ⁵⁵	ts ^h ə(ŋ)m ⁵¹ ts ^h əŋ ⁵⁵ həŋ ⁵⁵	*ts ^h əŋ məŋ həŋ
118	脆唔 脆弱	fragile	ts ^h əŋ ³³ m̩ ²¹ ts ^h əŋ ³³ jœk ²	ts ^h ə(ŋ)m ³¹ ts ^h əŋ ³³ jœk ²	*ts ^h əŋ məŋ jœk
119	醜唔 醜陋	ugly	ts ^h ew ³⁵ m̩ ²¹ ts ^h ew ³⁵ lew ²²	ts ^h e(u)m ³⁵¹ ts ^h ew ³⁵ lew ²²	*ts ^h ew məw lew
120	籌唔 籌備	organize	ts ^h ew ²¹ m̩ ²¹ ts ^h ew ²¹ pej ²²	ts ^h e(u)m ²¹ ts ^h ew ²¹ pej ²²	*ts ^h ew məw pej
121	抄唔 抄襲	plagiarize	ts ^h aw ⁵⁵ m̩ ²¹ ts ^h aw ⁵⁵ tsap ²	ts ^h a(u)m ⁵¹ ts ^h aw ⁵⁵ tsap ²	*ts ^h aw maw tsap
122	燥唔 燥熱	hot	ts ^h ow ³³ m̩ ²¹ ts ^h ow ³³ jit ²	ts ^h o(u)m ³¹ ts ^h ow ³³ jit ²	*ts ^h ow mow jit

123	親唔親切	benevolent	ts ^h ɛn ⁵⁵ m̩ ²¹ ts ^h ɛn ⁵⁵ ts ^h it ³	ts ^h ɛm ⁵¹ ts ^h ɛn ⁵⁵ ts ^h it ³	*ts ^h ɛn mɛn ts ^h it
124	淺唔淺薄	shallow	ts ^h in ³⁵ m̩ ²¹ ts ^h in ³⁵ pək ²	ts ^h im ³⁵¹ ts ^h in ³⁵ pək ²	*ts ^h in min pək
125	殘唔殘舊	worn out	ts ^h an ²¹ m̩ ²¹ ts ^h an ²¹ kɛw ²²	ts ^h am ²¹ ts ^h an ²¹ kɛw ²²	*ts ^h an man kɛw
126	暢唔暢通	smooth	ts ^h ɔŋ ³³ m̩ ²¹ ts ^h ɔŋ ³³ t ^h ɔŋ ⁵⁵	ts ^h ɔm ³¹ ts ^h ɔŋ ³³ t ^h ɔŋ ⁵⁵	*ts ^h ɔŋ mɔŋ t ^h ɔŋ
127	嘈唔嘈吵	noisy	ts ^h ow ²¹ m̩ ²¹ ts ^h ow ²¹ ts ^h aw ³⁵	ts ^h o(u)m ²¹ ts ^h ow ²¹ ts ^h aw ³⁵	*ts ^h ow mow ts ^h aw
128	寵唔寵愛	spoil	ts ^h ɔŋ ³⁵ m̩ ²¹ ts ^h ɔŋ ³⁵ ʔɔj ³³	ts ^h om ³⁵¹ ts ^h ɔŋ ³⁵ ʔɔj ³³	*ts ^h ɔŋ mɔŋ ʔɔj
129	聰唔聰明	intelligent	ts ^h ɔŋ ⁵⁵ m̩ ²¹ ts ^h ɔŋ ⁵⁵ mɛŋ ²¹	ts ^h om ⁵¹ ts ^h ɔŋ ⁵⁵ mɛŋ ²¹	*ts ^h ɔŋ mɔŋ mɛŋ
130	蒼唔蒼老	old	ts ^h ɔŋ ⁵⁵ m̩ ²¹ ts ^h ɔŋ ⁵⁵ low ¹³	ts ^h ɔm ⁵¹ ts ^h ɔŋ ⁵⁵ low ¹³	*ts ^h ɔŋ mɔŋ low
131	清唔清醒	clear-minded	ts ^h ɛŋ ⁵⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵ sɛŋ ³⁵	ts ^h ɛm ⁵¹ ts ^h ɛŋ ⁵⁵ sɛŋ ³⁵	*ts ^h ɛŋ mɛŋ sɛŋ
132	清唔清楚	clear	ts ^h ɛŋ ⁵⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵ ts ^h ɔ: ³⁵	ts ^h ɛm ⁵¹ ts ^h ɛŋ ⁵⁵ ts ^h ɔ: ³⁵	*ts ^h ɛŋ mɛŋ ts ^h ɔ:
133	清唔清爽	refreshing	ts ^h ɛŋ ⁵⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵ sɔŋ ³⁵	ts ^h ɛm ⁵⁵ ts ^h ɛŋ ⁵⁵ sɔŋ ³⁵	*ts ^h ɛŋ mɛŋ sɔŋ
134	拯唔拯救	save	ts ^h ɛŋ ³⁵ m̩ ²¹ tsok ⁵ kɛw ³³	ts ^h ɛm ⁵¹ tsok ⁵ kɛw ³³	*ts ^h ɛŋ mok kɛw
135	搶唔搶掠	snatch	ts ^h ɔŋ ³⁵ m̩ ²¹ ts ^h ɔŋ ³⁵ lət ²	ts ^h ɔm ³⁵¹ ts ^h ɔŋ ³⁵ lət ²	*ts ^h ɔŋ mɔŋ lət
136	沙唔沙啞	creaky voice	sa: ⁵⁵ m̩ ²¹ sa: ⁵⁵ a: ³⁵	sa(:)m ⁵¹ sa: ⁵⁵ ʔa: ³⁵	*sa: ma: ʔa:
137	梳唔梳洗	comb	sɔ: ⁵⁵ m̩ ²¹ sɔ: ⁵⁵ sɛj ³⁵	sɔ(:)m ⁵¹ sɔ: ⁵⁵ sɛj ³⁵	*sɔ: mɔ: sɛj
138	篩唔篩選	select	sɛj ⁵⁵ m̩ ²¹ sɛj ⁵⁵ syn ³⁵	sɛ(i)m ⁵¹ sɛj ⁵⁵ syn ³⁵	*sɛj mɛj syn
139	細唔細小	small	sɛj ³³ m̩ ²¹ sɛj ³³ siw ³⁵	sɛ(i)m ³¹ sɛj ³³ siw ³⁵	*sɛj mɛj siw
140	收唔收藏	collect	sɛw ⁵⁵ m̩ ²¹ sɛw ⁵⁵ ts ^h ɔŋ ²¹	sɛ(u)m ⁵¹ sɛw ⁵⁵ ts ^h ɔŋ ²	*sɛw mɛw ts ^h ɔŋ
141	深唔深遠	profound	sɛm ⁵⁵ m̩ ²¹ sɛm ⁵⁵ jyn ¹³	sɛm ⁵¹ sɛm ⁵⁵ jyn ¹³	*sɛm mɛm jyn

142	刪唔 刪剪	cut	san ⁵⁵ m̩ ²¹ san ⁵⁵ tsin ³⁵	sam ⁵¹ san ⁵⁵ tsin ³⁵	*san man tsin
143	順唔 順攤	easy going	sən ²² m̩ ²¹ sən ²² t ^h an ⁵⁵	səm ²¹ sən ²² t ^h an ⁵⁵	*sən mən t ^h an
144	神唔 神奇	miraculous	sən ²¹ m̩ ²¹ sən ²¹ k ^h ej ²¹	səm ²¹ sən ²¹ k ^h ej ²¹	*sən mən k ^h ej
145	新唔 新穎	new	sən ⁵⁵ m̩ ²¹ sən ⁵⁵ wej ²²	səm sən wej	*sən mən wej
146	辛唔 辛辣	spicy	sən ⁵⁵ m̩ ²¹ sən ⁵⁵ lat ²	səm ⁵⁵ sən ⁵⁵ lat ²²	*sən mən lat
147	神唔 神聖	holy	sən ²¹ m̩ ²¹ sən ²¹ seŋ ³³	səm ²¹ sən ²¹ seŋ ³³	*sən mən seŋ
148	順唔 順利	smooth	sən ²² m̩ ²¹ sən ²² lej ²²	səm ²¹ sən ²² lej ²²	*sən mən lej
149	旋唔 旋轉	rotate	syn ²¹ m̩ ²¹ syn ²¹ tsyn ³³	sym ²¹ syn ²¹ tsyn ³³	*syn myn tsyn
150	相唔 相信	believe	sœŋ ⁵⁵ m̩ ²¹ sœŋ ⁵⁵ sən ³³	sœm ⁵¹ sœŋ ⁵⁵ sən ³³	*sœŋ mœŋ sən
151	相唔 相同	same as	sœŋ ⁵⁵ m̩ ²¹ sœŋ ⁵⁵ t ^h oŋ ²¹	sœm ⁵¹ sœŋ ⁵⁵ t ^h oŋ ²¹	*sœŋ mœŋ t ^h oŋ
152	傷唔 傷害	hurt	sœŋ ⁵⁵ m̩ ²¹ sœŋ ⁵⁵ hoj ²²	sœm ⁵¹ sœŋ ⁵⁵ hoj ²²	*sœŋ mœŋ hoj
153	嘗唔 嘗試	try	sœŋ ²¹ m̩ ²¹ sœŋ ²¹ si: ³³	sœm ²¹ sœŋ ²¹ si: ³³	*sœŋ mœŋ si:
154	腥唔 腥臭	stinky	seŋ ⁵⁵ m̩ ²¹ seŋ ⁵⁵ ts ^h ew ³³	sem ⁵¹ seŋ ⁵⁵ ts ^h ew ³³	*seŋ meŋ ts ^h ew
155	生唔 生猛	lively	saŋ ⁵⁵ m̩ ²¹ saŋ ⁵⁵ maŋ ¹³	sam ⁵¹ saŋ ⁵⁵ maŋ ¹³	*saŋ maŋ maŋ
156	成唔 成功	successful	seŋ ²¹ m̩ ²¹ seŋ ²¹ koŋ ⁵⁵	sem ²¹ seŋ ²¹ koŋ ⁵⁵	*seŋ meŋ koŋ
157	承唔 承認	admit	seŋ ²¹ m̩ ²¹ seŋ ²¹ jeŋ ²²	sem ²¹ seŋ ²¹ jeŋ ²²	*seŋ meŋ jeŋ
158	鬆唔 鬆軟	soft	soŋ ⁵⁵ m̩ ²¹ soŋ ⁵⁵ jyn ¹³	som ⁵¹ soŋ ⁵⁵ jyn ¹³	*soŋ moŋ jyn
159	鬆唔 鬆馳	loose	soŋ ⁵⁵ m̩ ²¹ soŋ ⁵⁵ ts ^h i: ²¹	som ⁵¹ soŋ ⁵⁵ ts ^h i: ²¹	*soŋ moŋ ts ^h i:
160	濕唔 濕滯	unlucky	səp ⁵ m̩ ²¹ səp ⁵ tsəj ²²	səm ⁵¹ səp ⁵ tsəj ²²	*səp məp tsəj
161	殺唔 殺戮	kill	sat ³ m̩ ²¹ sat ³ lok ²	sam ³¹ sat ³ lok ²	*sat mat lok

162	熟唔 熟悉	familiar	sok ² m̩ ²¹ sok ² sek ⁵	som ²¹ sok ² sek ⁵	*sok mok sek
163	削唔 削減	deduct	sœk ³ m̩ ²¹ sœk ³ kam ³⁵	sœm ³¹ sœk ³ kam ³⁵	*sœk mœk kam
164	扭唔 扭擰	twist	lɛw ³⁵ m̩ ²¹ lɛw ³⁵ leŋ ²²	lɛ(u)m ³⁵ lɛw ³⁵ leŋ ²²	*lɛw mɛw leŋ
165	理唔 理睬	to show interest	lej ¹³ m̩ ²¹ lej ¹³ ts ^h ɔj ³⁵	le(i)m ¹³¹ lej ¹³ ts ^h ɔj ³⁵	*lej mej ts ^h ɔj
166	懶唔 懶惰	lazy	lan ¹³ m̩ ²¹ lan ¹³ tɔ: ²²	lam ¹³ lan ¹³ tɔ: ²²	*lan man tɔ:
167	攔唔 攔截	intercept	lan ²¹ m̩ ²¹ lan ²¹ tsit ²	lam ²¹ lan ²¹ tsit ²	*lan man tsit
168	連唔 連接	connect	lin ²¹ m̩ ²¹ lin ²¹ tsip ³	lim ²¹ lin ²¹ tsip ³	*lin min tsip
169	量唔 量度	measure	lœŋ ²¹ m̩ ²¹ lœŋ ²¹ tɔk ²	lœm ²¹ lœŋ ²¹ tɔk ²	*lœŋ mœŋ tɔk
170	涼唔 涼快	cool	lœŋ ²¹ m̩ ²¹ lœŋ ²¹ faj ³³	lœm ²¹ lœŋ ²¹ faj ³³	*lœŋ mœŋ faj
171	移唔 移動	move	ji: ²¹ m̩ ²¹ ji: ²¹ toŋ ²²	ji(:)m ²¹ ji: ²¹ toŋ ²²	*ji: mi: toŋ
172	預唔 預備	prepare	jy: ²² m̩ ²¹ jy: ²² pej ²²	jy(:)m ²¹ jy: ²² pej ²²	*jy: my: pej
173	愚唔 愚蠢	stupid	jy: ²¹ m̩ ²¹ jy: ²¹ ts ^h œn ³⁵	jy(:)m ²¹ jy: ²¹ ts ^h œn ³⁵	*jy: my: ts ^h œn
174	野唔 野蠻	vulgar	jɛ: ³⁵ m̩ ²¹ jɛ: ³⁵ man ²¹	jɛ(:)m ³⁵¹ jɛ: ³⁵ man ²¹	*jɛ: mɛ: man
175	邀唔 邀請	invite	jiw ⁵⁵ m̩ ²¹ tsi: ⁵⁵ ts ^h œŋ ³⁵	ji(u)m ⁵¹ tsi: ⁵⁵ ts ^h œŋ ³⁵	*jiw mi: ts ^h œŋ
176	油唔 油膩	greasy	jɛw ²¹ m̩ ²¹ jɛw ²¹ lej ²²	jɛ(u)m ²¹ jɛw ²¹ lej ²²	*jɛw mɛw lej
177	幼唔 幼稚	naive	jɛw ³³ m̩ ²¹ jɛw ³³ tsi: ²²	jɛ(u)m ³¹ jɛw ³³ tsi: ²²	*jɛw mɛw tsi:
178	陰唔 陰險	shady	jɛm ⁵⁵ m̩ ²¹ jɛm ⁵⁵ him ³⁵	jɛm ⁵¹ jɛm ⁵⁵ him ³⁵	*jɛm mɛm him
179	淫唔 淫賤	erotic	jɛm ²¹ m̩ ²¹ jɛm ²¹ tsin ²²	jɛm ²¹ jɛm ²¹ tsin ²²	*jɛm mɛm tsin

180	厭唔 厭惡	get fed up with	jim ³³ m̩ ²¹ jim ³³ wu: ³³	jim ³¹ jim ³³ wu: ³³	*jim mim wu:
181	燃唔 燃燒	burn	jin ²¹ m̩ ²¹ jin ²¹ siw ⁵⁵	jim ²¹ jin ²¹ siw ⁵⁵	*jin min siw
182	忍唔 忍耐	tolerate	jən ³⁵ m̩ ²¹ jən ³⁵ ləj ²²	jəm ³⁵¹ jən ³⁵ ləj ²²	*jən mən ləj
183	圓唔 圓滑	diplomatic	jyn ²¹ m̩ ²¹ jyn ²¹ wat ²	jym ²¹ jyn ²¹ wat ²	*jyn myn wat
184	容唔 容易	easy	joŋ ²¹ m̩ ²¹ joŋ ²¹ ji: ²²	jom ²¹ joŋ ²¹ ji: ²²	*joŋ moŋ ji:
185	勇唔 勇敢	courageous	joŋ ¹³ m̩ ²¹ joŋ ¹³ kəm ³⁵	jom ¹³¹ joŋ ¹³ kəm ³⁵	*joŋ moŋ kəm
186	認唔 認識	know	jeŋ ²² m̩ ²¹ jeŋ ²² sek ⁵	jem ²² jeŋ ²² sek ³	*jeŋ meŋ sek
187	應唔 應該	should	jeŋ ⁵⁵ m̩ ²¹ jeŋ ⁵⁵ kəj ⁵⁵	jem ⁵¹ jeŋ ⁵⁵ kəj ⁵⁵	*jeŋ meŋ kəj
188	熱唔 熱烈	hot	jit ² m̩ ²¹ jit ² lit ²	jim ²¹ jit ² lit ²	*jit mit lit
189	估唔 估計	estimate	ku: ³⁵ m̩ ²¹ ku: ³⁵ keŋ ³³	ku(:)m ³⁵ ku: ³⁵ keŋ ³³	*ku: mu: keŋ
190	孤唔 孤寒	mean	ku: ⁵⁵ m̩ ²¹ ku: ⁵⁵ hən ²¹	ku(:)m ⁵¹ ku: ⁵⁵ hən ²¹	*ku: mu: hən
191	嬌唔 嬌嗲	spoiled	kiw ⁵⁵ m̩ ²¹ kiw ⁵⁵ te: ³⁵	ki(u)m ⁵¹ kiw ⁵⁵ te: ³⁵	*kiw miw te:
192	高唔 高興	delighted	kow ⁵⁵ m̩ ²¹ kow ⁵⁵ heŋ ³³	ko(u)m ⁵¹ kow ⁵⁵ heŋ ³³	*kow mow heŋ
193	交唔 交換	exchange	kaw ⁵⁵ m̩ ²¹ kaw ⁵⁵ wun ²²	ka(u)m ⁵¹ kaw ⁵⁵ wun ²²	*kaw maw wun
194	高唔 高大	big	kow ⁵⁵ m̩ ²¹ kow ⁵⁵ taŋ ²²	ko(u)m ⁵¹ kow ⁵⁵ taŋ ²²	*kow mow taŋ
195	戒唔 戒除	get rid of	kaj ³³ m̩ ²¹ kaj ³³ ts ^h əu ²¹	ka(i)m ³¹ kaj ³³ ts ^h əu ²¹	*kaj maj ts ^h əu
196	計唔 計算	calculate	keŋ ³³ m̩ ²¹ keŋ ³³ syn ³³	kə(i)m ³¹ keŋ ³³ syn ³³	*keŋ meŋ syn
197	改唔 改變	change	kəj ³⁵ m̩ ²¹ kəj ³⁵ pin ³³	kə(i)m ³⁵¹ kəj ³⁵ pin ³³	*kəj məj pin
198	感唔 感謝	thank	kəm ³⁵ m̩ ²¹ kəm ³⁵ tse: ²²	kəm ³⁵¹ kəm ³⁵ tse: ²²	*kəm məm tse:

199	奸唔 奸詐	cunning	kan ⁵⁵ m̄ ²¹ kan ⁵⁵ tsa: ³³	kam ⁵¹ kan ⁵⁵ tsa: ³³	*kan man tsa:
200	跟唔 跟隨	follow	kən ⁵⁵ m̄ ²¹ kən ⁵⁵ ts ^h əu ²¹	kəm ⁵¹ kən ⁵⁵ ts ^h əu ²¹	*kən mən ts ^h əu
201	堅唔 堅強	tough	kin ⁵⁵ m̄ ²¹ kin ⁵⁵ k ^h œŋ ²¹	kim ⁵¹ kin ⁵⁵ k ^h œŋ ²¹	*kin min k ^h œŋ
202	乾唔 乾燥	dry	kən ⁵⁵ m̄ ²¹ kən ⁵⁵ ts ^h ow ³³	kəm ⁵¹ kən ⁵⁵ ts ^h ow ³³	*kən mən ts ^h ow
203	娟唔 娟好	good looking	kyn ⁵⁵ m̄ ²¹ kyn ⁵⁵ how ³⁵	kym ⁵¹ kyn ⁵⁵ how ³⁵	*kyn myn how
204	驚唔 驚嚇	frighten	keŋ ⁵⁵ m̄ ²¹ keŋ ⁵⁵ hak ³	kem ⁵¹ keŋ ⁵⁵ hak ³	*keŋ meŋ hak
205	供唔 供應	provide	koŋ ⁵⁵ m̄ ²¹ koŋ ⁵⁵ jeŋ ³³	kom ⁵¹ koŋ ⁵⁵ jeŋ ³³	*koŋ moŋ jeŋ
206	結唔 結合	combine	kit ³ m̄ ²¹ kit ³ həp ²	kim ³¹ kit ³ həp ²	*kit mit həp
207	隔唔 隔離	quarantine	kak ³ m̄ ²¹ kak ³ lej ²¹	kam ³¹ kak ³ lej ²¹	*kak mak lej
208	奇唔 奇怪	strange	k ^h ej ²¹ m̄ ²¹ k ^h ej ²¹ k ^w aj ³³	k ^h e(i)m ²¹ k ^h ej ²¹ k ^w aj ³³	*k ^h ej mej k ^w aj
209	拘唔 拘謹	reserved	k ^h əu ⁵⁵ m̄ ²¹ k ^h əu ⁵⁵ kən ³⁵	k ^h ə(u)m ⁵¹ k ^h əu ⁵⁵ kən ³⁵	*k ^h əu məu kən
210	溝唔 溝通	communicate	k ^h ew ⁵⁵ m̄ ²¹ k ^h ew ⁵⁵ t ^h oŋ ⁵⁵	k ^h ə(u)m ⁵¹ k ^h ew ⁵⁵ t ^h oŋ ⁵⁵	*k ^h ew məw t ^h oŋ
211	傾唔 傾斜	slanting/ steep	k ^h ej ⁵⁵ m̄ ²¹ k ^h ej ⁵⁵ ts ^h ɛ: ³³	k ^h em ⁵¹ k ^h ej ⁵⁵ ts ^h ɛ: ³³	*k ^h ej meŋ ts ^h ɛ:
212	強唔 強壯	strong	k ^h œŋ ²¹ m̄ ²¹ k ^h œŋ ²¹ tsɔŋ ³³	k ^h œm ²¹ k ^h œŋ ²¹ tsɔŋ ³³	*k ^h œŋ məŋ tsɔŋ
213	勤唔 勤奮	hard-working	k ^h ən ²¹ m̄ ²¹ k ^h ən ²¹ fən ³⁵	k ^h əm ²¹ k ^h ən ²¹ fən ³⁵	*k ^h ən mən fən
214	吸唔 吸啜	suck	k ^h ep ⁵ m̄ ²¹ k ^h ep ⁵ tsyt ³	k ^h em ⁵¹ k ^h ep ⁵ tsyt ³	*k ^h ep məp tsyt
215	乖唔 乖巧	obedient	k ^w aj ⁵⁵ m̄ ²¹ k ^w aj ⁵⁵ haw ³⁵	k ^w a(i)m ⁵¹ k ^w aj ⁵⁵ haw ³⁵	*k ^w aj maj haw
216	歸唔 歸還	return	k ^w ej ⁵⁵ m̄ ²¹ k ^w ej ⁵⁵ wan ²¹	k ^w ə(i)m ⁵¹ k ^w ej ⁵⁵ wan ²¹	*k ^w ej mej wan

217	管唔 管理	manage	k ^w un ³⁵ m̄ ²¹ k ^w un ³⁵ lej ¹³	k ^w um ³⁵¹ k ^w un ³⁵ lej ¹³	*k ^w un mun lej
218	倔唔 倔強	stubborn	k ^w et ² m̄ ²¹ k ^w et ² k ^h œŋ ¹³	k ^w em ²¹ k ^w et ² k ^h œŋ ¹³	*k ^w et met k ^h œŋ
219	誇唔 誇張	exaggerated	k ^{wh} a: ⁵⁵ m̄ ²¹ k ^{wh} a: ⁵⁵ tsœŋ ⁵⁵	k ^{wh} a(:)m ⁵¹ k ^{wh} a: ⁵⁵ tsœŋ ⁵⁵	*k ^{wh} a: ⁵⁵ ma: ⁵⁵ tsœŋ ⁵⁵
220	虧唔 虧損	deficit	k ^{wh} ej ⁵⁵ m̄ ²¹ k ^{wh} ej ⁵⁵ syn ³⁵	k ^{wh} e(i)m ⁵⁵ k ^{wh} ej ⁵⁵ syn ³⁵	*k ^{wh} ej ⁵⁵ mej ⁵⁵ syn ³⁵
221	虧唔 虧欠	owe	k ^{wh} ej ⁵⁵ m̄ ²¹ k ^{wh} ej ⁵⁵ him ³³	k ^{wh} e(i)m ⁵¹ k ^{wh} ej ⁵⁵ him ³³	*k ^{wh} ej ⁵⁵ mej ⁵⁵ him ³³
222	困唔 困難	difficult	k ^{wh} en ³³ m̄ ²¹ k ^{wh} en ³³ lan ²¹	k ^{wh} em ³¹ k ^{wh} en ³³ lan ²¹	*k ^{wh} en ³³ men ³³ lan ²¹
223	胡唔 胡鬧	rowdy	wu: ²¹ m̄ ²¹ wu: ²¹ law ²²	wu(:)m ²¹ wu: ²¹ law ²²	*wu: mu: law
224	威唔 威風	awe-inspiring	wej ⁵⁵ m̄ ²¹ wej ⁵⁵ foŋ ⁵⁵	we(i)m ⁵¹ wej ⁵⁵ foŋ ⁵⁵	*wej mej foŋ
225	穩唔 穩定	stable	wen ³⁵ m̄ ²¹ wen ³⁵ teŋ ²²	wem ³⁵ wen ³⁵ teŋ ²²	*wen men teŋ
226	緩唔 緩慢	slow	wun ²¹ m̄ ²¹ wun ²¹ man ²²	wum ²¹ wun ²¹ man ²²	*wun mun man
227	彎唔 彎曲	bent	wan ⁵⁵ m̄ ²¹ wan ⁵⁵ k ^h ok ⁵	wam ⁵¹ wan ⁵⁵ k ^h ok ⁵	*wan man k ^h ok
228	溫唔 溫暖	warm	wen ⁵⁵ m̄ ²¹ wen ⁵⁵ lyn ¹³	wem ⁵¹ wen ⁵⁵ lyn ¹³	*wen men lyn
229	混唔 混亂	chaotic	wen ²² m̄ ²¹ wen ²² lyn ²²	wem ²¹ wen ²² lyn ²²	*wen men lyn
230	混唔 混淆	confused	wen ²² m̄ ²¹ wen ²² aw ²¹	wem ²¹ wen ²² ?aw ²¹	*wen men ?aw
231	滑唔 滑稽	amusing	wat ² m̄ ²¹ wat ² k ^h ej ⁵⁵	wam ²¹ wat ² k ^h ej ⁵⁵	*wat mat k ^h ej
232	鬱唔 鬱悶	melancholic	wet ⁵⁵ m̄ ²¹ wet ⁵⁵ mun ²²	wem ⁵¹ wet ⁵⁵ mun ²²	*wet met mun
233	下唔 下賤	despicable	ha: ²² m̄ ²¹ ha: ²² tsin ²²	ha(:)m ²¹ ha: ²² tsin ²²	ha: ²² ma: ²² tsin ²²

234	可唔 可以	able	hɔ: ³⁵ m̩ ²¹ hɔ: ³⁵ ji: ¹³	hɔ(:)m ³⁵¹ hɔ: ³⁵ ji: ¹³	hɔ: ³⁵ mɔ: ³⁵ ji: ¹³
235	虛唔 虛假	fake	həʊ ⁵⁵ m̩ ²¹ həʊ ⁵⁵ ka: ³⁵	hə(ʊ)m ⁵¹ həʊ ⁵⁵ ka: ³⁵	həʊ ⁵⁵ məʊ ⁵⁵ ka: ³⁵
236	開唔 開放	open	hɔj ⁵⁵ m̩ ²¹ hɔj ⁵⁵ fɔŋ ³³	hɔ(i)m ⁵¹ hɔj ⁵⁵ fɔŋ ³³	hɔj ⁵⁵ məj ⁵⁵ fɔŋ ³³
237	害唔 害怕	scared	hɔj ²² m̩ ²¹ hɔj ²² pa: ³³	hɔ(i)m ²¹ hɔj ²² pa: ³³	hɔj ²² məj ²² pa: ³³
	囂唔 囂張	arrogant	hiw ⁵⁵ m̩ ²¹ hiw ⁵⁵ tsœŋ ⁵⁵	hi(u)m ⁵¹ hiw ⁵⁵ tsœŋ ⁵⁵	hiw ⁵⁵ miw ⁵⁵ tsœŋ ⁵⁵
238	豪唔 豪放	liberal	how ²¹ m̩ ²¹ how ²¹ fɔŋ ³³	ho(u)m ²¹ how ²¹ fɔŋ ³³	how ²¹ mow ²¹ fɔŋ ³³
239	謙唔 謙虛	modest	him ⁵⁵ m̩ ²¹ him ⁵⁵ həʊ ⁵⁵	him ⁵¹ him ⁵⁵ həʊ ⁵⁵	him ⁵⁵ mim ⁵⁵ həʊ ⁵⁵
240	慳唔 慳儉	frugal	han ⁵⁵ m̩ ²¹ han ⁵⁵ kim ²²	ham ⁵¹ han ⁵⁵ kim ²²	han ⁵⁵ man ⁵⁵ kim ²²
241	興唔 興旺	prosperous	heŋ ⁵⁵ m̩ ²¹ heŋ ⁵⁵ wɔŋ ²²	hem ⁵¹ heŋ ⁵⁵ wɔŋ ²²	heŋ ⁵⁵ meŋ ⁵⁵ wɔŋ ²²
242	痕唔 痕癢	itchy	hən ²¹ m̩ ²¹ hən ²¹ jœŋ ¹³	həm ²¹ hən ²¹ jœŋ ¹³	hən ²¹ mən ²¹ jœŋ ¹³
243	兇唔 兇殘	fierce	hoŋ ⁵⁵ m̩ ²¹ hoŋ ⁵⁵ ts ^h an ²¹	hom ⁵¹ hoŋ ⁵⁵ ts ^h an ²¹	ho ⁵⁵ ŋ moŋ ⁵⁵ ts ^h an ²¹
244	馨唔 馨香	fragrant	heŋ ⁵⁵ m̩ ²¹ heŋ ⁵⁵ hœŋ ⁵⁵	hem ⁵¹ heŋ ⁵⁵ hœŋ ⁵⁵	heŋ ⁵⁵ meŋ ⁵⁵ hœŋ ⁵⁵
245	興唔 興起	revive	heŋ ⁵⁵ m̩ ²¹ heŋ ⁵⁵ hej ³⁵	hem ⁵¹ heŋ ⁵⁵ hej ³⁵	heŋ ⁵⁵ meŋ ⁵⁵ hej ³⁵
246	響唔 響亮	loud	hœŋ ³⁵ m̩ ²¹ hœŋ ³⁵ lœŋ ²²	hœm ³⁵¹ hœŋ ³⁵ lœŋ ²²	hœŋ ³⁵ mœŋ ³⁵ lœŋ ²²
247	協唔 協調	coordinate	hip ³ m̩ ²¹ hip ³ t ^h iw ²¹	him ³¹ hip ³ t ^h iw ²¹	hip ³ mip ³ t ^h iw ²¹
248	黑唔 黑暗	dark	hək ⁵ m̩ ²¹ hək ⁵ ʔem ³³	həm ⁵¹ hək ⁵ ʔem ³³	hək ⁵ mək ⁵ ʔem ³³
249	學唔 學習	learn	hɔk ² m̩ ²¹ hɔk ² tsap ²	hɔm ²¹ hɔk ² tsap ²	hɔk ² mɔk ² tsap ²
250	危唔 危險	dangerous	ɛj ²¹ m̩ ²¹ ɛj ²¹ him ³⁵	ʔe(i)m ²¹ ʔej ²¹ him ³⁵	ʔej ²¹ məj ²¹ him ³⁵
251	矮唔 矮小	short	ɛj ³⁵ m̩ ²¹ ɛj ³⁵ siw ³⁵	ʔe(i)m ³⁵¹ ʔej ³⁵ siw ³⁵	ʔej ³⁵ məj ³⁵ siw ³⁵

252	翳唔 翳焗	stuffy	ɛj ³³ m̄ ²¹ ɛj ³³ kok ²	ʔɛ(i)m ³¹ ʔɛj ³³ kok ²	ʔɛj ³³ mɛj ³³ kok ²
253	拗唔 拗撬	argue	aw ³³ m̄ ²¹ aw ³³ kiw ²²	ʔa(u)m ³¹ ʔaw ³³ kiw ²²	ʔa:w ²² ma:w ³³ kiw ²²
254	嘔唔 嘔吐	vomit	ɛw ³⁵ m̄ ²¹ ɛw ³⁵ t ^h ow ³³	ʔɛ(u)m ³⁵¹ ʔɛw ³⁵ t ^h ow ³³	ʔɛw ³⁵ mɛw ³⁵ t ^h ow ³³
255	暗唔 暗淡	dim	ɛm ³³ m̄ ²¹ ɛm ³³ tam ²²	ʔɛm ³¹ ʔɛm ³³ tam ²²	ʔɛm ³¹ mɛm ³³ tam ²²
256	安唔 安全	safe	ɔn ⁵⁵ m̄ ²¹ ɔn ⁵⁵ ts ^h yn ²¹	ʔɔm ⁵¹ ʔɔn ⁵⁵ ts ^h yn ²¹	ʔɔn ⁵⁵ mɔn ⁵⁵ ts ^h yn ²¹
257	硬唔 硬淨	hard and strong	aj ²² m̄ ²¹ aj ²² tsej ²²	ʔam ²¹ ʔaj ²² tsej ²²	ʔaj ²¹ maj ²² tsej ²²
258	昂唔 昂貴	expensive	ɔŋ ²¹ m̄ ²¹ ɔŋ ²¹ k ^w ɛj ³³	ʔɔm ²¹ ʔɔŋ ²¹ k ^w ɛj ³³	ʔɔŋ ²¹ mɔŋ ²¹ k ^w ɛj ³³
259	戇唔 戇直	simple-minded	ɔŋ ²² m̄ ²¹ ɔŋ ²² tsek ²	ʔɔm ²¹ ʔɔŋ ²² tsek ²	ʔɔŋ ²² mɔŋ ²² tsek ²
260	愕唔 愕然	surprised	ɔk ² m̄ ²¹ ɔk ² jin ²¹	ʔɔm ²¹ ʔɔk ² jin ²¹	ʔɔk ² mɔk ² jin ²¹

APPENDIX III

Transcription of σ_1 - σ_2 - m^{21} - σ_3 - σ_4 phrases

Remarks:

1. The tone of illegal syllable contraction is not shown because such contraction is impermissible under any circumstances regardless of tonal behavior.
2. A syllable without a corresponding Chinese character is indicated as \emptyset .

Item no.	Chinese Charac-ters	English Gloss (X-or-not)	Citation	σ_2 - m^{21} contraction	m^{21} - σ_3 contraction
1	霸度唔 霸度	tyrannical	pa: ³³ tow ²² m ²¹ pa: ³³ tow ²²	*pa: tom pa: tow	*pa: tow ma: tow
2	包含唔 包含	include	paw ⁵⁵ hem ²¹ m ²¹ paw ⁵⁵ hem ²¹	*paw hem paw hem	*paw hem maw hem
3	爆發唔 爆發	explode	paw ³³ fat ³ m ²¹ paw ³³ fat ³	*paw fam paw fat	*paw fat maw fat
4	背負唔 背負	carry	puq ¹³ fu: ²² m ²¹ puq ¹³ fu: ²²	*puq fum puq fu:	*puq fu: m puq fu:
5	標緻唔 標緻	pretty	piw ⁵⁵ tsi: ³³ m ²¹ piw ⁵⁵ tsi: ³³	*piw tsim piw tsi:	*piw tsi: miw tsi:
6	避忌唔 避忌	taboo	pej ²² kej ²² m ²¹ pej ²² kej ²²	*pej kem pej kej	*pej kej mej kej
7	補充唔 補充	supplement	pow ³⁵ ts ^h oŋ ⁵⁵ m ²¹ pow ³⁵ ts ^h oŋ ⁵⁵	*pow ts ^h om pow ts ^h oŋ	*pow ts ^h oŋ mow ts ^h oŋ
8	保護唔 保護	protect	pow ³⁵ wu: ²² m ²¹ pow ³⁵ wu: ²²	*pow wum pow wu:	*pow wu: mow wu:
9	報服唔 報服	revenge	pow ³³ fok ² m ²¹ pow ³³ fok ²	*pow fom pow fok	*pow fok mow fok

10	暴露唔 暴露	expose	pow ²² low ²² m̩ ²¹ pow ²² low ²²	*pow lom pow low	*pow low mow low
11	捕捉唔 捕捉	catch	pow ²² tsok ⁵ m̩ ²¹ pow ²² tsok ⁵	*pow tsom pow tsok	*pow tsok mow tsok
12	叛逆唔 叛逆	delinquent	pun ²² jek ² m̩ ²¹ pun ²² jek ²	*pun jem pun jek	*pun jek mun jek
13	搬遷唔 搬遷	move	pun ⁵⁵ ts ^h in ⁵⁵ m̩ ²¹ pun ⁵⁵ ts ^h in ⁵⁵	*pun ts ^h im pun ts ^h in	*pun ts ^h in mun ts ^h in
14	幫忙唔 幫忙	help	pɔŋ ⁵⁵ mɔŋ ²¹ m̩ ²¹ pɔŋ ⁵⁵ mɔŋ ²¹	*pɔŋ mɔm pɔŋ mɔŋ	*pɔŋ mɔŋ mɔŋ mɔŋ
15	八卦唔 八卦	nosy	pat ³ k ^w a: ³³ m̩ ²¹ pat ³ k ^w a: ³³	*pat k ^w am pat k ^w a:	*pat k ^w a: mat k ^w a:
16	別緻唔 別緻	exquisite	pit ² tsi: ³³ m̩ ²¹ pit ² tsi: ³³	*pit tsim pit tsi:	*pit tsi: mit tsi:
17	逼迫唔 逼迫	prosecute	pek ⁵ pak ⁵ m̩ ²¹ pek ⁵ pak ⁵	*pek pam pek pak	*pek pak mek pak
18	搏殺唔 搏殺	dedicated to work	pɔk ³ sat ³ m̩ ²¹ pɔk ³ sat ³	*pɔk sam pɔk sat	*pɔk sat mɔk sat
19	薄弱唔 薄弱	weak	pɔk ² jœk ² m̩ ²¹ pɔk ² jœk ²	*pɔk jœm pɔk jœk	*pɔk jœk mɔk jœk
20	破壞唔 破壞	damage	p ^h ɔ: ³³ waj ²² m̩ ²¹ p ^h ɔ: ³³ waj ²²	*p ^h ɔ: wam p ^h ɔ: waj	*p ^h ɔ: waj mɔ: waj
21	破裂唔 破裂	crack	p ^h ɔ: ³³ lit ³ m̩ ²¹ p ^h ɔ: ³³ lit ³	*p ^h ɔ: lim p ^h ɔ: lit	*p ^h ɔ: lit mɔ: lit
22	破爛唔 破爛	worn out	p ^h ɔ: ³³ lan ²² m̩ ²¹ p ^h ɔ: ³³ lan ²²	*p ^h ɔ: lam p ^h ɔ: lan	*p ^h ɔ: lan mɔ: lan
23	派發唔 派發	deliver	p ^h aj ³³ fat ³³ m̩ ²¹ p ^h aj ³³ fat ³³	*p ^h aj fam p ^h aj fat	*p ^h aj fat maj fat
24	排列唔 排列	list	p ^h aj ²¹ lit ²² m̩ ²¹ p ^h aj ²¹ lit ²²	*p ^h aj lim p ^h aj lit	*p ^h aj lit maj lit
25	配合唔 配合	match	p ^h uɥ ³³ hɛp ² m̩ ²¹ p ^h uɥ ³³ hɛp ²	*p ^h uɥ hɛm p ^h uɥ hɛp	*p ^h uɥ hɛp muɥ hɛp
26	賠償唔 賠償	compensate	p ^h uɥ ²¹ sœŋ ²¹ m̩ ²¹ p ^h uɥ ²¹ sœŋ ²¹	*p ^h uɥ sœm p ^h uɥ sœŋ	*p ^h uɥ sœŋ muɥ sœŋ
27	佩戴唔 佩戴	put on	p ^h uɥ ³³ taj ³³ m̩ ²¹ p ^h uɥ ³³ taj ³³	*p ^h uɥ tam p ^h uɥ taj	*p ^h uɥ taj muɥ taj
28	飄逸唔 飄逸	graceful	p ^h iw ⁵⁵ jɛt ²² m̩ ²¹ p ^h iw ⁵⁵ jɛt ²²	*p ^h iw jɛm p ^h iw jɛt	*p ^h iw jɛt miw jɛt

29	頻密唔 頻密	frequent	p ^h en ²¹ met ²² m̩ ²¹ p ^h en ²¹ met ²²	*p ^h en məm p ^h en met	*p ^h en met mən met
30	編織唔 編織	knit	p ^h in ⁵⁵ tsek ⁵ m̩ ²¹ p ^h in ⁵⁵ tsek ⁵	*p ^h in tsem p ^h in tsek	*p ^h in tsek min tsek
31	偏袒唔 偏袒	bias	p ^h in ⁵⁵ t ^h an ³⁵ m̩ ²¹ p ^h in ⁵⁵ t ^h an ³⁵	*p ^h in t ^h am p ^h in t ^h an	*p ^h in t ^h an min t ^h an
32	平淡唔 平淡	ordinary	p ^h ej ²¹ tam ²² m̩ ²¹ p ^h ej ²¹ tam ²²	*p ^h ej tam p ^h ej tam	*p ^h ej tam mej tam
33	化妝唔 化妝	make up	fa: ³³ tsəŋ ⁵⁵ m̩ ²¹ fa: ³³ tsəŋ ⁵⁵	*fa: tsəm fa: tsəŋ	*fa: tsəŋ ma: tsəŋ
34	火爆唔 火爆	bad tempered	fə: ³⁵ paw ³³ m̩ ²¹ fə: ³⁵ paw ³³	*fə: pam fə: paw	*fə: paw mə: paw
35	火燙唔 火燙	hot	fə: ³⁵ t ^h əŋ ³³ m̩ ²¹ fə: ³⁵ t ^h əŋ ³³	*fə: t ^h əm fə: t ^h əŋ	*fə: t ^h əŋ mə: t ^h əŋ
36	符合唔 符合	match	fu: ²¹ həp ² m̩ ²¹ fu: ²¹ həp ²	*fu: həm fu: həp	*fu: həp mu: həp
37	苦澀唔 苦澀	bitter	fu: ³⁵ kip ³ m̩ ²¹ fu: ³⁵ kip ³	*fu: kim fu: kip	*fu: kip mu: kip
38	負擔唔 負擔	carry	fu: ²² tam ⁵⁵ m̩ ²¹ fu: ²² tam ⁵⁵	*fu: tam fu: tam	*fu: tam mu: tam
39	富裕唔 富裕	rich	fu: ³³ jy: ²² m̩ ²¹ fu: ³³ jy: ²²	*fu: jym fu: jy:	*fu: jy: mu: jy:
40	快捷唔 快捷	quick	faj ³³ tsit ³ m̩ ²¹ faj ³³ tsit ³	*faj tsim faj tsit	*faj tsit maj tsit
41	廢柴唔 廢柴	useless	fəj ³³ ts ^h aj ²¹ m̩ ²¹ fəj ³³ ts ^h aj ²¹	*fəj ts ^h am fəj ts ^h aj	*fəj ts ^h aj mej ts ^h aj
42	飛翔唔 飛翔	fly	fəj ⁵⁵ ts ^h əŋ ²¹ m̩ ²¹ fəj ⁵⁵ ts ^h əŋ ²¹	*fəj ts ^h əm fəj ts ^h əŋ	*fəj ts ^h əŋ mej ts ^h əŋ
43	肥胖唔 肥胖	fat	fəj ²¹ pun ²² m̩ ²¹ fəj ²¹ pun ²²	*fəj pum fəj pun	*fəj pun mej pun
44	返歸唔 返歸	return	fan ⁵⁵ k ^w ej ⁵⁵ m̩ ²¹ fan ⁵⁵ k ^w ej ⁵⁵	*fan k ^w əm fan k ^w ej	*fan k ^w ej man k ^w ej
45	煩躁唔 煩躁	bad tempered	fan ²¹ ts ^h ow ³³ m̩ ²¹ fan ²¹ ts ^h ow ³³	*fan ts ^h əm fan ts ^h ow	*fan ts ^h ow man ts ^h ow
46	分離唔 分離	separate	fən ⁵⁵ lej ²¹ m̩ ²¹ fən ⁵⁵ lej ²¹	*fən lem fən lej	*fən lej mən lej
47	封建唔 封建	feudal	fəŋ ⁵⁵ kin ³³ m̩ ²¹ fəŋ ⁵⁵ kin ³³	*fəŋ kim fəŋ kin	*fəŋ kin moŋ kin

48	發問唔 發問	ask	fat ³ men ²² m̩ ²¹ fat ³ men ²²	*fat mem fat men	*fat men mat men
49	發達唔 發達	get rich	fat ³ tat ² m̩ ²¹ fat ³ tat ²	*fat tam fat tat	*fat tat mat tat
50	發掘唔 發掘	dig	fat ³ k ^w et ² m̩ ²¹ fat ³ k ^w et ²	*fat k ^w em fat k ^w et	*fat k ^w et mat k ^w et
51	闊落唔 闊落	wide	fut ³ lək ² m̩ ²¹ fut ³ lək ²	*fut lom fut lək	*fut lək mut lək
52	服從唔 服從	succumb	fok ² ts ^h oŋ ²¹ m̩ ²¹ fok ² ts ^h oŋ ²¹	*fok ts ^h om fok ts ^h oŋ	*fok ts ^h oŋ mok ts ^h oŋ
53	麻痺唔 麻痺	numb	ma: ²¹ pej ³³ m̩ ²¹ ma: ²¹ pej ³³	*ma: pem ma: pej	*ma: pej ma: pej
54	磨蝕唔 磨蝕	worn out	mə: ²¹ sit ² m̩ ²¹ mə: ²¹ sit ²	*mə: sim mə: sit	*mə: sit mə: sit
55	磨擦唔 磨擦	rub	mə: ²¹ ts ^h at ³ m̩ ²¹ mə: ²¹ ts ^h at ³	*mə: ts ^h am mə: ts ^h at	*mə: ts ^h at mə: ts ^h at
56	𧄨𧄨唔 𧄨𧄨	irritated	məŋ ³⁵ tsəŋ ³⁵ m̩ ²¹ məŋ ³⁵ tsəŋ ³⁵	*məŋ tsem məŋ tsəŋ	*məŋ tsəŋ məŋ tsəŋ
57	明曉唔 明曉	understand	məŋ ²¹ hiw ³⁵ m̩ ²¹ məŋ ²¹ hiw ³⁵	*məŋ him məŋ hiw	*məŋ hiw məŋ hiw
58	明白唔 明白	understand	məŋ ²¹ pak ² m̩ ²¹ məŋ ²¹ pak ²	*məŋ pam məŋ pak	*məŋ pak məŋ pak
59	忙碌唔 忙碌	busy	məŋ ²¹ lok ⁵⁵ m̩ ²¹ məŋ ²¹ lok ⁵⁵	*məŋ lom məŋ lok	*məŋ lok məŋ lok
60	懵懂唔 懵懂	ignorant	məŋ ³⁵ toŋ ³⁵ m̩ ²¹ məŋ ³⁵ toŋ ³⁵	*məŋ tom məŋ toŋ	*məŋ toŋ məŋ toŋ
61	滅絕唔 滅絕	annihilate	mit ² tsyt ²² m̩ ²¹ mit ² tsyt ²²	*mit tsym mit tsyt	*mit tsyt mit tsyt
62	剝削唔 剝削	exploit	mək ⁵ sək ³ m̩ ²¹ mək ⁵ sək ³	*mək səm mək sək	*mək sək mək sək
63	木獨唔 木獨	idle	mək ² tok ² m̩ ²¹ mək ² tok ²	*mək tom mək tok	*mək tok mək tok
64	打探唔 打探	hear about	ta: ³⁵ t ^h am ³³ m̩ ²¹ ta: ³⁵ t ^h am ³³	*ta: t ^h am ta: t ^h am	*ta: t ^h am ma: t ^h am
65	打掃唔 打掃	sweep	ta: ³⁵ sow ³³ m̩ ²¹ ta: ³⁵ sow ³³	*ta: som ta: sow	*ta: sow ma: sow

66	打交唔 打交	fight	ta: ³⁵ kaw ⁵⁵ m̩ ²¹ ta: ³⁵ kaw ⁵⁵	*ta: kam ta: kaw	*ta: kaw ma: kaw
67	墮落唔 墮落	fall from virtue	tə: ²² lək ² m̩ ²¹ tə: ²² lək ²	*tə: ləm tə: lək	*tə: lək mə: lək
68	特別唔 特別	special	tək ² pit ² m̩ ²¹ tək ² pit ²	*tək pim tək pit	*tək pit mək pit
69	毒辣唔 毒辣	poisonous	tok ² lat ² m̩ ²¹ tok ² lat ²	*tok lam tok lat	*tok lat mok lat
70	敦厚唔 敦厚	sincere	tən ⁵⁵ hew ¹³ m̩ ²¹ tən ⁵⁵ hew ¹³	*tən hēm tən hew	*tən hew mən hew
71	堵塞唔 堵塞	jam	tow ³⁵ sek ⁵ m̩ ²¹ tow ³⁵ sek ⁵	*tow sēm tow sek	*tow sek mow sek
72	癲狂唔 癲狂	crazy	tin ⁵⁵ k ^{wh} ɔŋ ²¹ m̩ ²¹ tin ⁵⁵ k ^{wh} ɔŋ ²¹	*tin k ^{wh} ɔm tin k ^{wh} ɔŋ	*tin k ^{wh} ɔŋ min k ^{wh} ɔŋ
73	短小唔 短小	short	tyn ³⁵ siw ³⁵ m̩ ²¹ tyn ³⁵ siw ³⁵	*tyn sim tyn siw	*tyn siw myn siw
74	跳躍唔 跳躍	jump	t ^h iw ³³ jœk ³ m̩ ²¹ t ^h iw ³³ jœk ³	*t ^h iw jœm t ^h iw jœk	*t ^h iw jœk miw jœk
75	挑剔唔 挑剔	critical	t ^h iw ⁵⁵ t ^h ek ⁵ m̩ ²¹ t ^h iw ⁵⁵ t ^h ek ⁵	*t ^h iw t ^h em t ^h iw t ^h ek	*t ^h iw t ^h ek miw t ^h ek
76	偷竊唔 偷竊	theft	t ^h ew ⁵⁵ sit ³ m̩ ²¹ t ^h ew ⁵⁵ sit ³	*t ^h ew sim t ^h ew sit	*t ^h ew sit mēw sit
77	投入唔 投入	be into	t ^h ew ²¹ jɛp ² m̩ ²¹ t ^h ew ²¹ jɛp ²	*t ^h ew jēm t ^h ew jɛp	*t ^h ew jɛp mēw jɛp
78	逃脫唔 逃脫	escape	t ^h ow ²¹ t ^h yt ³ m̩ ²¹ t ^h ow ²¹ t ^h yt ³	*t ^h ow t ^h ym t ^h ow t ^h yt	*t ^h ow t ^h yt mow t ^h yt
79	托付唔 托付	entrust	t ^h ək ³³ fu: ²² m̩ ²¹ t ^h ək ³³ fu: ²²	*t ^h ək fum t ^h ək fu:	*t ^h ək fu: mək fu:
80	疼錫唔 疼錫	care about	t ^h oŋ ³³ sek ³ m̩ ²¹ t ^h oŋ ³³ sek ³	*t ^h oŋ sēm t ^h oŋ sek	*t ^h oŋ sek moŋ sek
81	甜蜜唔 甜蜜	sweet	t ^h im ²¹ mət ² m̩ ²¹ t ^h im ²¹ mət ²	*t ^h im mēm t ^h im mət	*t ^h im mət mim mət
82	停止唔 停止	stop	t ^h ɛŋ ²¹ tsi: ³⁵ m̩ ²¹ t ^h ɛŋ ²¹ tsi: ³⁵	*t ^h ɛŋ tsim t ^h ɛŋ tsi:	*t ^h ɛŋ tsi: mɛŋ tsi:
83	渣豆唔 渣豆	inferior	tsa: ³⁵ təw ³⁵ m̩ ²¹ tsa: ³⁵ təw ³⁵	*tsa: tēm tsa: təw	*tsa: təw ma: təw

84	遮蓋唔 遮蓋	cover	tse: ⁵⁵ k ^h ɔj ³³ m̩ ²¹ tse: ⁵⁵ k ^h ɔj ³³	*tse: k ^h ɔm tse: k ^h ɔj	*tse: k ^h ɔj mɛ: k ^h ɔj
85	知道唔 知道	know	tsi: ⁵⁵ tow ³³ m̩ ²¹ tsi: ⁵⁵ tow ³³	*tsi: tom tsi: tow	*tsi: tow mi: tow
86	指點唔 指點	point	tsi: ³⁵ tim ³⁵ m̩ ²¹ tsi: ³⁵ tim ³⁵	*tsi: tim tsi: tim	*tsi: tim mi: tim
87	支撐唔 支撐	support	tsi: ⁵⁵ ts ^h aj ³³ m̩ ²¹ tsi: ⁵⁵ ts ^h aj ³³	*tsi: ts ^h am tsi: ts ^h aj	*tsi: ts ^h aj mi: ts ^h aj
88	阻礙唔 阻礙	obstruct	tsɔ: ³⁵ ʔɔj ²² m̩ ²¹ tsɔ: ³⁵ ʔɔj ²²	*tsɔ: ʔɔm tsɔ: ʔɔj	*tsɔ: ʔɔj mɔ: ʔɔj
89	擠壓唔 擠壓	squeeze	tsej ⁵⁵ ʔat ³ m̩ ²¹ tsej ⁵⁵ ʔat ³	*tsej ʔam tsej ʔat	*tsej ʔat mej ʔat
90	追求唔 追求	pursue	tseŋ ⁵⁵ k ^w ew ²¹ m̩ ²¹ tseŋ ⁵⁵ k ^w ew ²¹	*tseŋ k ^w em tseŋ k ^w ew	*tseŋ k ^w ew meŋ k ^w ew
91	造作唔 造作	fabricate	tsow ²² tsɔk ³ m̩ ²¹ tsow ²² tsɔk ³	*tsow tsɔm tsow tsɔk	*tsow tsɔk mow tsɔk
92	浸淫唔 浸淫	soaked	tsem ³³ jem ²¹ m̩ ²¹ tsem ³³ jem ²¹	*tsem jem tsem jem	*tsem jem mem jem
93	尖銳唔 尖銳	sharp	tsim ⁵⁵ jɔj ²² m̩ ²¹ tsim ⁵⁵ jɔj ²²	*tsim jem tsim jɔj	*tsim jɔj mim jɔj
94	真實唔 真實	real	tsen ⁵⁵ set ² m̩ ²¹ tsen ⁵⁵ set ²	*tsen sem tsen set	*tsen set men set
95	專業唔 專業	specialised	tsyn ⁵⁵ jip ² m̩ ²¹ tsyn ⁵⁵ jip ²	*tsyn jim tsyn jip	*tsyn jip myn jip
96	裝扮唔 裝扮	disguise as	tsɔŋ ⁵⁵ pan ²² m̩ ²¹ tsɔŋ ⁵⁵ pan ²²	*tsɔŋ pam tsɔŋ pan	*tsɔŋ pan mɔŋ pan
97	忠誠唔 忠誠	loyal	tsɔŋ ⁵⁵ seŋ ²¹ m̩ ²¹ tsɔŋ ⁵⁵ seŋ ²¹	*tsɔŋ sem tsɔŋ seŋ	*tsɔŋ seŋ moŋ seŋ
98	中肯唔 中肯	to the point	tsɔŋ ⁵⁵ heŋ ³⁵ m̩ ²¹ tsɔŋ ⁵⁵ heŋ ³⁵	*tsɔŋ hem tsɔŋ heŋ	*tsɔŋ heŋ moŋ heŋ
99	憎惡唔 憎惡	hate	tseŋ ⁵⁵ wu: ³³ m̩ ²¹ tseŋ ⁵⁵ wu: ³³	*tseŋ wum tseŋ wu:	*tseŋ wu: meŋ wu:
100	憎恨唔 憎恨	hate	tseŋ ⁵⁵ hen ²² m̩ ²¹ tseŋ ⁵⁵ hen ²²	*tseŋ hem tseŋ hen	*tseŋ hen meŋ hen
101	增加唔 增加	increase	tseŋ ⁵⁵ ka: ⁵⁵ m̩ ²¹ tseŋ ⁵⁵ ka: ⁵⁵	*tseŋ kam tseŋ ka:	*tseŋ ka: meŋ ka:
102	精叻唔 精叻	smart	tseŋ ⁵⁵ lek ⁵⁵ m̩ ²¹ tseŋ ⁵⁵ lek ⁵⁵	*tseŋ lem tseŋ lek	*tseŋ lek meŋ lek
103	精通唔 精通	good at	tseŋ ⁵⁵ toŋ ⁵⁵ m̩ ²¹ tseŋ ⁵⁵ toŋ ⁵⁵	*tseŋ tom tseŋ toŋ	*tseŋ toŋ meŋ toŋ

104	整理唔 整理	organize	tsej ³⁵ lej ¹³ m̄ ²¹ tsej ³⁵ lej ¹³	*tsej lem tsej lej	*tsej lej mej lej
105	正義唔 正義	righteous	tsej ³³ ji: ²² m̄ ²¹ tsej ³³ ji: ²²	*tsej jim tsej ji:	*tsej ji: mej ji:
106	習慣唔 習慣	accustomed	tsap ² k ^w an ³³ m̄ ²¹ tsap ² k ^w an ³³	*tsap k ^w am tsap k ^w an	*tsap k ^w an map k ^w an
107	執拾唔 執拾	tidy up	tsəp ⁵⁵ səp ² m̄ ²¹ tsəp ⁵⁵ səp ²	*tsəp səm tsəp səp	*tsəp səp məp səp
108	接納唔 接納	accept	tsip ³ lap ² m̄ ²¹ tsip ³ lap ²	*tsip lam tsip lap	*tsip lap mip lap
109	接受唔 接受	accept	tsip ³ səw ²² m̄ ²¹ tsip ³ səw ²²	*tsip səm tsip səw	*tsip səw mip səw
110	直接唔 直接	straight forward	tsek ² tsip ³ m̄ ²¹ tsek ² tsip ³	*tsek tsim tsek tsip	*tsek tsip mek tsip
111	足夠唔 足夠	enough	tsok ⁵ kəw ³³ m̄ ²¹ tsok ⁵ kəw ³³	*tsok kəm tsok kəw	*tsok kəw mok kəw
112	痴纏唔 痴纏	attached	ts ^h i: ⁵⁵ ts ^h in ²¹ m̄ ²¹ ts ^h i: ⁵⁵ ts ^h in ²¹	*ts ^h i: ts ^h im ts ^h i: ts ^h in	*ts ^h i: ts ^h in mi: ts ^h in
113	儲存唔 儲存	store	ts ^h y: ¹³ ts ^h yn ²¹ m̄ ²¹ ts ^h y: ¹³ ts ^h yn ²¹	*ts ^h y: ts ^h ym ts ^h y: ts ^h yn	*ts ^h y: ts ^h yn my: ts ^h yn
114	調查唔 調查	investigate	t ^h iw ²¹ ts ^h a: ²¹ m̄ ²¹ t ^h iw ²¹ ts ^h a: ²¹	*t ^h iw ts ^h am t ^h iw ts ^h a:	*t ^h iw ts ^h a: miw ts ^h a:
115	潮濕唔 潮濕	humid	ts ^h iw ²¹ səp ⁵ m̄ ²¹ ts ^h iw ²¹ səp ⁵	*ts ^h iw səm ts ^h iw səp	*ts ^h iw səp miw səp
116	淒美唔 淒美	romantic	ts ^h əj ⁵⁵ mej ¹³ m̄ ²¹ ts ^h əj ⁵⁵ mej ¹³	*ts ^h əj mem ts ^h əj mej	*ts ^h əj mej məj mej
117	吹噓唔 吹噓	boast	ts ^h əq ⁵⁵ həq ⁵⁵ m̄ ²¹ ts ^h əq ⁵⁵ həq ⁵⁵	*ts ^h əq həm ts ^h əq həq	*ts ^h əq həq məq həq
118	脆弱唔 脆弱	fragile	ts ^h əq ³³ jək ² m̄ ²¹ ts ^h əq ³³ jək ²	*ts ^h əq jəem ts ^h əq jək	*ts ^h əq jək məq jək
119	醜陋唔 醜陋	ugly	ts ^h əw ³⁵ ləw ²² m̄ ²¹ ts ^h əw ³⁵ ləw ²²	*ts ^h əw ləm ts ^h əw ləw	*ts ^h əw ləw məw ləw
120	籌備唔 籌備	organize	ts ^h əw ²¹ pej ²² m̄ ²¹ ts ^h əw ²¹ pej ²²	*ts ^h əw pem ts ^h əw pej	*ts ^h əw pej məw pej
121	抄襲唔 抄襲	plagiarize	ts ^h aw ⁵⁵ tsap ² m̄ ²¹ ts ^h aw ⁵⁵ tsap ²	*ts ^h aw tsam ts ^h aw tsap	*ts ^h aw tsap maw tsap
122	燥熱唔 燥熱	hot	ts ^h ow ³³ jit ² m̄ ²¹ ts ^h ow ³³ jit ²	*ts ^h ow jim ts ^h ow jit	*ts ^h ow jit mow jit

123	親切唔 親切	benevolent	ts ^h ɛn ⁵⁵ ts ^h it ³ m̩ ²¹ ts ^h ɛn ⁵⁵ ts ^h it ³	*ts ^h ɛn ts ^h im ts ^h ɛn ts ^h it	*ts ^h ɛn ts ^h it mɛn ts ^h it
124	淺薄唔 淺薄	shallow	ts ^h in ³⁵ pək ² m̩ ²¹ ts ^h in ³⁵ pək ²	*ts ^h in pɔm ts ^h in pək	*ts ^h in pək min pək
125	殘舊唔 殘舊	worn out	ts ^h an ²¹ kɛw ²² m̩ ²¹ ts ^h an ²¹ kɛw ²²	*ts ^h an kɛm ts ^h an kɛw	*ts ^h an kɛw man kɛw
126	暢通唔 暢通	smooth	ts ^h ɔŋ ³³ t ^h oŋ ⁵⁵ m̩ ²¹ ts ^h ɔŋ ³³ t ^h oŋ ⁵⁵	*ts ^h ɔŋ t ^h om ts ^h ɔŋ t ^h oŋ	*ts ^h ɔŋ t ^h oŋ mɔŋ t ^h oŋ
127	嘈吵唔 嘈吵	noisy	ts ^h ow ²¹ ts ^h aw ³⁵ m̩ ²¹ ts ^h ow ²¹ ts ^h aw ³⁵	*ts ^h ow ts ^h am ts ^h ow ts ^h aw	*ts ^h ow ts ^h aw mow ts ^h aw
128	寵愛唔 寵愛	spoil	ts ^h oŋ ³⁵ ʔɔj ³³ m̩ ²¹ ts ^h oŋ ³⁵ ʔɔj ³³	*ts ^h oŋ ʔɔm ts ^h oŋ ʔɔj	*ts ^h oŋ ʔɔj moŋ ʔɔj
129	聰明唔 聰明	intelligent	ts ^h oŋ ⁵⁵ meŋ ²¹ m̩ ²¹ ts ^h oŋ ⁵⁵ meŋ ²¹	*ts ^h oŋ mem ts ^h oŋ meŋ	*ts ^h oŋ meŋ moŋ meŋ
130	蒼老唔 蒼老	old	ts ^h ɔŋ ⁵⁵ low ¹³ m̩ ²¹ ts ^h ɔŋ ⁵⁵ low ¹³	*ts ^h ɔŋ lom ts ^h ɔŋ low	*ts ^h ɔŋ low moŋ low
131	清醒唔 清醒	clear-minded	ts ^h ɛŋ ⁵⁵ seŋ ³⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵ seŋ ³⁵	*ts ^h ɛŋ sem ts ^h ɛŋ seŋ	*ts ^h ɛŋ seŋ meŋ seŋ
132	清楚唔 清楚	clear	ts ^h ɛŋ ⁵⁵ ts ^h ɔ: ³⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵ ts ^h ɔ: ³⁵	*ts ^h ɛŋ ts ^h ɔm ts ^h ɛŋ ts ^h ɔ:	*ts ^h ɛŋ ts ^h ɔ: meŋ ts ^h ɔ:
133	清爽唔 清爽	refreshing	ts ^h ɛŋ ⁵⁵ soŋ ³⁵ m̩ ²¹ ts ^h ɛŋ ⁵⁵ soŋ ³⁵	*ts ^h ɛŋ sɔm ts ^h ɛŋ soŋ	*ts ^h ɛŋ soŋ meŋ soŋ
134	拯救唔 拯救	save	ts ^h ɛŋ ³⁵ kɛw ³³ m̩ ²¹ tsok ⁵ kɛw ³³	*ts ^h ɛŋ kɛm tsok kɛw	*ts ^h ɛŋ kɛw mok kɛw
135	搶掠唔 搶掠	snatch	ts ^h ɔŋ ³⁵ lət ² m̩ ²¹ ts ^h ɔŋ ³⁵ lət ²	*ts ^h ɔŋ lɔm ts ^h ɔŋ lət	*ts ^h ɔŋ lət mɔŋ lət
136	沙啞唔 沙啞	creaky voice	sa: ⁵⁵ ʔa: ³⁵ m̩ ²¹ sa: ⁵⁵ ʔa: ³⁵	*sa: ʔam sa: ʔa:	*sa: ʔa: ma: ʔa:
137	梳洗唔 梳洗	comb	so: ⁵⁵ səj ³⁵ m̩ ²¹ so: ⁵⁵ səj ³⁵	*so: səm so: səj	*so: səj mo: səj
138	篩選唔 篩選	select	səj ⁵⁵ syn ³⁵ m̩ ²¹ səj ⁵⁵ syn ³⁵	*səj sym səj syn	*səj syn ɛj syn
139	細小唔 細小	small	səj ³³ siw ³⁵ m̩ ²¹ səj ³³ siw ³⁵	*səj sim səj siw	*səj siw məj siw
140	收藏唔 收藏	collect	səw ⁵⁵ ts ^h ɔŋ ²¹ m̩ ²¹ səw ⁵⁵ ts ^h ɔŋ ²¹	*səw ts ^h ɔm səw ts ^h ɔŋ	*səw ts ^h ɔŋ məw ts ^h ɔŋ
141	深遠唔 深遠	profound	sɛm ⁵⁵ jyn ¹³ m̩ ²¹ sɛm ⁵⁵ jyn ¹³	*sɛm jym sɛm jyn	*sɛm jyn məm jyn

142	刪剪唔 刪剪	cut	san ⁵⁵ tsin ³⁵ m̩ ²¹ san ⁵⁵ tsin ³⁵	*san tsim san tsin	*san tsin man tsin
143	順攤唔 順攤	easy going	sən ²² t ^h an ⁵⁵ m̩ ²¹ sən ²² t ^h an ⁵⁵	*sən t ^h am sən t ^h an	*sən t ^h an mən t ^h an
144	神奇唔 神奇	miraculous	sən ²¹ k ^h ej ²¹ m̩ ²¹ sən ²¹ k ^h ej ²¹	*sən k ^h em sən k ^h ej	*sən k ^h ej mən k ^h ej
145	新穎唔 新穎	new	sən ⁵⁵ weŋ ²² m̩ ²¹ sən ⁵⁵ weŋ ²²	*sən wem sən weŋ	*sən weŋ mən weŋ
146	辛辣唔 辛辣	spicy	sən ⁵⁵ lat ² m̩ ²¹ sən ⁵⁵ lat ²	*sən lam sən lat	*sən lat mən lat
147	神聖唔 神聖	holy	sən ²¹ seŋ ³³ m̩ ²¹ sən ²¹ seŋ ³³	*sən sem sən seŋ	*sən seŋ mən seŋ
148	順利唔 順利	smooth	sən ²² lej ²² m̩ ²¹ sən ²² lej ²²	*sən lem sən lej	*sən lej mən lej
149	旋轉唔 旋轉	rotate	syn ²¹ tsyn ³³ m̩ ²¹ syn ²¹ tsyn ³³	*syn tsym syn tsyn	*syn tsyn myn tsyn
150	相信唔 相信	believe	sœŋ ⁵⁵ sən ³³ m̩ ²¹ sœŋ ⁵⁵ sən ³³	*sœŋ sœm sœŋ sən	*sœŋ sən mœŋ sən
151	相同唔 相同	same as	sœŋ ⁵⁵ t ^h oŋ ²¹ m̩ ²¹ sœŋ ⁵⁵ t ^h oŋ ²¹	*sœŋ t ^h om sœŋ t ^h oŋ	*sœŋ t ^h oŋ mœŋ t ^h oŋ
152	傷害唔 傷害	hurt	sœŋ ⁵⁵ hɔŋ ²² m̩ ²¹ sœŋ ⁵⁵ hɔŋ ²²	*sœŋ hœm sœŋ hɔŋ	*sœŋ hɔŋ mœŋ hɔŋ
153	嘗試唔 嘗試	try	sœŋ ²¹ si: ³³ m̩ ²¹ sœŋ ²¹ si: ³³	*sœŋ sim sœŋ si:	*sœŋ si: mœŋ si:
154	腥臭唔 腥臭	stinky	seŋ ⁵⁵ ts ^h ew ³³ m̩ ²¹ seŋ ⁵⁵ ts ^h ew ³³	*seŋ ts ^h em seŋ ts ^h ew	*seŋ ts ^h ew meŋ ts ^h ew
155	生猛唔 生猛	lively	saŋ ⁵⁵ maŋ ¹³ m̩ ²¹ saŋ ⁵⁵ maŋ ¹³	*saŋ mam saŋ maŋ	*saŋ maŋ maŋ maŋ
156	成功唔 成功	successful	seŋ ²¹ koŋ ⁵⁵ m̩ ²¹ seŋ ²¹ koŋ ⁵⁵	*seŋ kom seŋ koŋ	*seŋ koŋ meŋ koŋ
157	承認唔 承認	admit	seŋ ²¹ jeŋ ²² m̩ ²¹ seŋ ²¹ jeŋ ²²	*seŋ jem seŋ jeŋ	*seŋ jeŋ meŋ jeŋ
158	鬆軟唔 鬆軟	soft	soŋ ⁵⁵ jyn ¹³ m̩ ²¹ soŋ ⁵⁵ jyn ¹³	*soŋ jym soŋ jyn	*soŋ jyn moŋ jyn
159	鬆馳唔 鬆馳	loose	soŋ ⁵⁵ ts ^h i: ²¹ m̩ ²¹ soŋ ⁵⁵ ts ^h i: ²¹	*soŋ ts ^h im soŋ ts ^h i:	*soŋ ts ^h i: moŋ ts ^h i:
160	濕滯唔 濕滯	unlucky	səp ⁵ tsej ²² m̩ ²¹ səp ⁵ tsej ²²	*səp tsem səp tsej	*səp tsej məp tsej
161	殺戮唔 殺戮	kill	sat ³ lok ² m̩ ²¹ sat ³ lok ²	*sat lom sat lok	*sat lok mat lok

162	熟悉唔 熟悉	familiar	sok ² sek ⁵ m̩ ²¹ sok ² sek ⁵	*sok sem sok sek	*sok sek mok sek
163	削減唔 削減	deduct	sœk ³ kam ³⁵ m̩ ²¹ sœk ³ kam ³⁵	*sœk kam sœk kam	*sœk kam mœk kam
164	扭擰唔 扭擰	twist	lœw ³⁵ lej ²² m̩ ²¹ lœw ³⁵ lej ²²	*lœw lem lœw lej	*lœw lej mœw lej
165	理睬唔 理睬	to show interest	lej ¹³ ts ^h œj ³⁵ m̩ ²¹ lej ¹³ ts ^h œj ³⁵	*lej ts ^h œm lej ts ^h œj	*lej ts ^h œj mej ts ^h œj
166	懶惰唔 懶惰	lazy	lan ¹³ tœ ²² m̩ ²¹ lan ¹³ tœ ²²	*lan tœm lan tœ	*lan tœ man tœ
167	攔截唔 攔截	intercept	lan ²¹ tsit ² m̩ ²¹ lan ²¹ tsit ²	*lan tsim lan tsit	*lan tsit man tsit
168	連接唔 連接	connect	lin ²¹ tsip ³ m̩ ²¹ lin ²¹ tsip ³	*lin tsim lin tsip	*lin tsip min tsip
169	量度唔 量度	measure	lœŋ ²¹ tœk ² m̩ ²¹ lœŋ ²¹ tœk ²	*lœŋ tœm lœŋ tœk	*lœŋ tœk mœŋ tœk
170	涼快唔 涼快	cool	lœŋ ²¹ faj ³³ m̩ ²¹ lœŋ ²¹ faj ³³	*lœŋ fam lœŋ faj	*lœŋ faj mœŋ faj
171	移動唔 移動	move	ji: ²¹ toŋ ²² m̩ ²¹ ji: ²¹ toŋ ²²	*ji: tomji: toŋ	*ji: toŋ mi: toŋ
172	預備唔 預備	prepare	jy: ²² pej ²² m̩ ²¹ jy: ²² pej ²²	*jy: pemjy: pej	*jy: pej my: pej
173	愚蠢唔 愚蠢	stupid	jy: ²¹ ts ^h œn ³⁵ m̩ ²¹ jy: ²¹ ts ^h œn ³⁵	*jy: ts ^h œmjy: ts ^h œn	*jy: ts ^h œn my: ts ^h œn
174	野蠻唔 野蠻	vulgar	jœ: ³⁵ man ²¹ m̩ ²¹ jœ: ³⁵ man ²¹	*jœ: mamjœ: man	*jœ: man mœ: man
175	邀請唔 邀請	invite	jiw ⁵⁵ ts ^h œŋ ³⁵ m̩ ²¹ tsi: ⁵⁵ ts ^h œŋ ³⁵	*jiw ts ^h œm tsi: ts ^h œŋ	*jiw ts ^h œŋ mi: ts ^h œŋ
176	油膩唔 油膩	greasy	jœw ²¹ lej ²² m̩ ²¹ jœw ²¹ lej ²²	*jœw lemjœw lej	*jœw lej mœw lej
177	幼稚唔 幼稚	naive	jœw ³³ tsi: ²² m̩ ²¹ jœw ³³ tsi: ²²	*jœw tsimjœw tsi:	*jœw tsi: mœw tsi:
178	陰險唔 陰險	shady	jœm ⁵⁵ him ³⁵ m̩ ²¹ jœm ⁵⁵ him ³⁵	*jœm himjœm him	*jœm him mœm him
179	淫賤唔 淫賤	erotic	jœm ²¹ tsin ²² m̩ ²¹ jœm ²¹ tsin ²²	*jœm tsimjœm tsin	*jœm tsin mœm tsin

180	厭惡唔 厭惡	get fed up with	jim ³³ wu: ³³ m̩ ²¹ jim ³³ wu: ³³	*jim wum jim wu:	*jim wu: mim wu:
181	燃燒唔 燃燒	burn	jin ²¹ siw ⁵⁵ m̩ ²¹ jin ²¹ siw ⁵⁵	*jin sim jin siw	*jin siw min siw
182	忍耐唔 忍耐	tolerate	jən ³⁵ ləj ²² m̩ ²¹ jən ³⁵ ləj ²²	*jən ləm jən ləj	*jən ləj mən ləj
183	圓滑唔 圓滑	diplomatic	jyn ²¹ wat ² m̩ ²¹ jyn ²¹ wat ²	*jyn wam jyn wat	*jyn wat myn wat
184	容易唔 容易	easy	joŋ ²¹ ji: ²² m̩ ²¹ joŋ ²¹ ji: ²²	*joŋ jim joŋ ji:	*joŋ ji: moŋ ji:
185	勇敢唔 勇敢	courageous	joŋ ¹³ kəm ³⁵ m̩ ²¹ joŋ ¹³ kəm ³⁵	*joŋ kəm joŋ kəm	*joŋ kəm moŋ kəm
186	認識唔 認識	know	jeŋ ²² sek ⁵ m̩ ²¹ jeŋ ²² sek ⁵	*jeŋ sem jeŋ sek	*jeŋ sek meŋ sek
187	應該唔 應該	should	jeŋ ⁵⁵ kəj ⁵⁵ m̩ ²¹ jeŋ ⁵⁵ kəj ⁵⁵	*jeŋ kəm jeŋ kəj	*jeŋ kəj meŋ kəj
188	熱烈唔 熱烈	hot	jit ² lit ² m̩ ²¹ jit ² lit ²	*jit lim jit lit	*jit lit mit lit
189	估計唔 估計	estimate	ku: ³⁵ kəj ³³ m̩ ²¹ ku: ³⁵ kəj ³³	*ku: kəm ku: kəj	*ku: kəj mu: kəj
190	孤寒唔 孤寒	mean	ku: ⁵⁵ hən ²¹ m̩ ²¹ ku: ⁵⁵ hən ²¹	*ku: həm ku: hən	*ku: hən mu: hən
191	嬌嗲唔 嬌嗲	spoiled	kiw ⁵⁵ te: ³⁵ m̩ ²¹ kiw ⁵⁵ te: ³⁵	*kiw təm kiw te:	*kiw te: miw te:
192	高興唔 高興	delighted	kow ⁵⁵ hej ³³ m̩ ²¹ kow ⁵⁵ hej ³³	*kow hem kow hej	*kow hej mow hej
193	交換唔 交換	exchange	kaw ⁵⁵ wun ²² m̩ ²¹ kaw ⁵⁵ wun ²²	*kaw wum kaw wun	*kaw wun maw wun
194	高大唔 高大	big	kow ⁵⁵ taj ²² m̩ ²¹ kow ⁵⁵ taj ²²	*kow tam kow taj	*kow taj mow taj
195	戒除唔 戒除	get rid of	kaj ³³ ts ^h əu ²¹ m̩ ²¹ kaj ³³ ts ^h əu ²¹	*kaj ts ^h əm kaj ts ^h əu	*kaj ts ^h əu maj ts ^h əu
196	計算唔 計算	calculate	kəj ³³ syn ³³ m̩ ²¹ kəj ³³ syn ³³	*kəj sym kəj syn	*kəj syn meŋ syn
197	改變唔 改變	change	kəj ³⁵ pin ³³ m̩ ²¹ kəj ³⁵ pin ³³	*kəj pim kəj pin	*kəj pin məj pin
198	感謝唔 感謝	thank	kəm ³⁵ tse: ²² m̩ ²¹ kəm ³⁵ tse: ²²	*kəm tsem kəm tse:	*kəm tse: məm tse:

199	奸詐唔 奸詐	cunning	kan ⁵⁵ tsa: ³³ m̩ ²¹ kan ⁵⁵ tsa: ³³	*kan tsam kan tsa:	*kan tsa: man tsa:
200	跟隨唔 跟隨	follow	kən ⁵⁵ ts ^h əu ²¹ m̩ ²¹ kən ⁵⁵ ts ^h əu ²¹	*kən ts ^h əm kən ts ^h əu	*kən ts ^h əu mən ts ^h əu
201	堅強唔 堅強	tough	kin ⁵⁵ k ^h œŋ ²¹ m̩ ²¹ kin ⁵⁵ k ^h œŋ ²¹	*kin k ^h œm kin k ^h œŋ	*kin k ^h œŋ min k ^h œŋ
202	乾燥唔 乾燥	dry	kən ⁵⁵ ts ^h ow ³³ m̩ ²¹ kən ⁵⁵ ts ^h ow ³³	*kən ts ^h om kən ts ^h ow	*kən ts ^h ow mən ts ^h ow
203	娟好唔 娟好	good looking	kyn ⁵⁵ how ³⁵ m̩ ²¹ kyn ⁵⁵ how ³⁵	*kyn hom kyn how	*kyn how myn how
204	驚嚇唔 驚嚇	frighten	keŋ ⁵⁵ hak ³ m̩ ²¹ keŋ ⁵⁵ hak ³	*keŋ ham keŋ hak	*keŋ hak meŋ hak
205	供應唔 供應	provide	koŋ ⁵⁵ jeŋ ³³ m̩ ²¹ koŋ ⁵⁵ jeŋ ³³	*koŋ jem koŋ jeŋ	*koŋ jeŋ moŋ jeŋ
206	結合唔 結合	combine	kit ³ hɛp ² m̩ ²¹ kit ³ hɛp ²	*kit hɛm kit hɛp	*kit hɛp mit hɛp
207	隔離唔 隔離	quarantine	kak ³ lej ²¹ m̩ ²¹ kak ³ lej ²¹	*kak lem kak lej	*kak lej mak lej
208	奇怪唔 奇怪	strange	k ^h ej ²¹ k ^w aj ³³ m̩ ²¹ k ^h ej ²¹ k ^w aj ³³	*k ^h ej k ^w am k ^h ej k ^w aj	*k ^h ej k ^w aj mej k ^w aj
209	拘謹唔 拘謹	reserved	k ^h əu ⁵⁵ kən ³⁵ m̩ ²¹ k ^h əu ⁵⁵ kən ³⁵	*k ^h əu kəm k ^h əu kən	*k ^h əu kən məu kən
210	溝通唔 溝通	communicate	k ^h ew ⁵⁵ t ^h oŋ ⁵⁵ m̩ ²¹ k ^h ew ⁵⁵ t ^h oŋ ⁵⁵	*k ^h ew t ^h om k ^h ew t ^h oŋ	*k ^h ew t ^h oŋ məw t ^h oŋ
211	傾斜唔 傾斜	slanting/ steep	k ^h ej ⁵⁵ ts ^h ɛ: ³³ m̩ ²¹ k ^h ej ⁵⁵ ts ^h ɛ: ³³	*k ^h ej ts ^h ɛm k ^h ej ⁵⁵ ts ^h ɛ:	*k ^h ej ts ^h ɛ: meŋ ⁵⁵ ts ^h ɛ:
212	強壯唔 強壯	strong	k ^h œŋ ²¹ tsəŋ ³³ m̩ ²¹ k ^h œŋ ²¹ tsəŋ ³³	*k ^h œŋ tsəm k ^h œŋ tsəŋ	*k ^h œŋ tsəŋ məŋ tsəŋ
213	勤奮唔 勤奮	hard-working	k ^h en ²¹ fən ³⁵ m̩ ²¹ k ^h en ²¹ fən ³⁵	*k ^h en fəm k ^h en fən	*k ^h en fən mən fən
214	吸啜唔 吸啜	suck	k ^h ɛp ⁵ tsyt ³ m̩ ²¹ k ^h ɛp ⁵ tsyt ³	*k ^h ɛp tsym k ^h ɛp tsyt	*k ^h ɛp tsyt məp tsyt
215	乖巧唔 乖巧	obedient	k ^w aj ⁵⁵ haw ³⁵ m̩ ²¹ k ^w aj ⁵⁵ haw ³⁵	*k ^w aj ham k ^w aj haw	*k ^w aj haw maj haw
216	歸還唔 歸還	return	k ^w ej ⁵⁵ wan ²¹ m̩ ²¹ k ^w ej ⁵⁵ wan ²¹	*k ^w ej wam k ^w ej wan	*k ^w ej wan meŋ wan

217	管理唔 管理	manage	k ^w un ³⁵ lej ¹³ m̩ ²¹ k ^w un ³⁵ lej ¹³	*k ^w un lem k ^w un lej	*k ^w un lej mun lej
218	倔強唔 倔強	stubborn	k ^w et ² k ^h œŋ ¹³ m̩ ²¹ k ^w et ² k ^h œŋ ¹³	*k ^w et k ^h œm k ^w et k ^h œŋ	*k ^w et k ^h œŋ mət k ^h œŋ
219	誇張唔 誇張	exaggerated	k ^{wh} a: ⁵⁵ tsœŋ ⁵⁵ m̩ ²¹ k ^{wh} a: ⁵⁵ tsœŋ ⁵⁵	*k ^{wh} a: tsœm k ^{wh} a: tsœŋ	*k ^{wh} a: tsœŋ ma: tsœŋ
220	虧損唔 虧損	deficit	k ^{wh} ej ⁵⁵ syn ³⁵ m̩ ²¹ k ^{wh} ej ⁵⁵ syn ³⁵	*k ^{wh} ej sym k ^{wh} ej syn	*k ^{wh} ej syn mēj syn
221	虧欠唔 虧欠	owe	k ^{wh} ej ⁵⁵ him ³³ m̩ ²¹ k ^{wh} ej ⁵⁵ him ³³	*k ^{wh} ej him k ^{wh} ej him	*k ^{wh} ej him mēj him
222	困難唔 困難	difficult	k ^{wh} en ³³ lan ²¹ m̩ ²¹ k ^{wh} en ³³ lan ²¹	*k ^{wh} en lam k ^{wh} en lan	*k ^{wh} en lan mən lan
223	胡鬧唔 胡鬧	rowdy	wu: ²¹ law ²² m̩ ²¹ wu: ²¹ law ²²	*wu: lam wu: law	*wu: law mu: law
224	威風唔 威風	awe-inspiring	wěj ⁵⁵ foŋ ⁵⁵ m̩ ²¹ wěj ⁵⁵ foŋ ⁵⁵	*wěj fom wěj foŋ	*wěj foŋ mēj foŋ
225	穩定唔 穩定	stable	wen ³⁵ teŋ ²² m̩ ²¹ wen ³⁵ teŋ ²²	*wen tem wen teŋ	*wen teŋ mən teŋ
226	緩慢唔 緩慢	slow	wun ²¹ man ²² m̩ ²¹ wun ²¹ man ²²	*wun mam wun man	*wun man mun man
227	彎曲唔 彎曲	bent	wan ⁵⁵ k ^h ok ⁵ m̩ ²¹ wan ⁵⁵ k ^h ok ⁵	*wan k ^h om wan k ^h ok	*wan k ^h ok man k ^h ok
228	溫暖唔 溫暖	warm	wen ⁵⁵ lyn ¹³ m̩ ²¹ wen ⁵⁵ lyn ¹³	*wen lym wen lyn	*wen lyn mən lyn
229	混亂唔 混亂	chaotic	wen ²² lyn ²² m̩ ²¹ wen ²² lyn ²²	*wen lym wen lyn	*wen lyn mən lyn
230	混淆唔 混淆	confused	wen ²² ?aw ²¹ m̩ ²¹ wen ²² ?aw ²¹	*wen ?am wen ?aw	*wen ?aw mən ?aw
231	滑稽唔 滑稽	amusing	wat ² k ^h ej ⁵⁵ m̩ ²¹ wat ² k ^h ej ⁵⁵	*wat k ^h em wat k ^h ej	*wat k ^h ej mat k ^h ej
232	鬱悶唔 鬱悶	melancholic	wet ⁵⁵ mun ²² m̩ ²¹ wet ⁵⁵ mun ²²	*wet mum wet mun	*wet mun mət mun
233	下賤唔 下賤	despicable	ha: ²² tsin ²² m̩ ²¹ ha: ²² tsin ²²	*ha: tsim ha: tsin	*ha: tsin ma: tsin

234	可以唔 可以	able	hə: ³⁵ ji: ¹³ m̩ ²¹ hə: ³⁵ ji: ¹³	*hə: jim hə: ji:	*hə: ji: mə: ji:
235	虛假唔 虛假	fake	həŋ ⁵⁵ ka: ³⁵ m̩ ²¹ həŋ ⁵⁵ ka: ³⁵	*həŋ kam həŋ ka:	*həŋ ka: məŋ ka:
236	開放唔 開放	open	həj ⁵⁵ fəŋ ³³ m̩ ²¹ həj ⁵⁵ fəŋ ³³	*həj fəŋ həj fəŋ	*həj fəŋ məj fəŋ
237	害怕唔 害怕	scared	həj ²² pa: ³³ m̩ ²¹ həj ²² pa: ³³	*həj pam həj pa:	*həj pa: məj pa:
	囂張唔 囂張	arrogant	hiw ⁵⁵ tsəŋ ⁵⁵ m̩ ²¹ hiw ⁵⁵ tsəŋ ⁵⁵	*hiw tsəŋ hiw tsəŋ	*hiw tsəŋ miw tsəŋ
238	豪放唔 豪放	liberal	how ²¹ fəŋ ³³ m̩ ²¹ how ²¹ fəŋ ³³	*how fəŋ how fəŋ	*how fəŋ mow fəŋ
239	謙虛唔 謙虛	modest	him ⁵⁵ həŋ ⁵⁵ m̩ ²¹ him ⁵⁵ həŋ ⁵⁵	*him həŋ him həŋ	*him həŋ mim həŋ
240	慳儉唔 慳儉	frugal	han ⁵⁵ kim ²² m̩ ²¹ han ⁵⁵ kim ²²	*han kim han kim	*han kim man kim
241	興旺唔 興旺	prosperous	heŋ ⁵⁵ wəŋ ²² m̩ ²¹ heŋ ⁵⁵ wəŋ ²²	*heŋ wəŋ heŋ wəŋ	*heŋ wəŋ meŋ wəŋ
242	痕癢唔 痕癢	itchy	hən ²¹ jəŋ ¹³ m̩ ²¹ hən ²¹ jəŋ ¹³	*hən jəŋ hən jəŋ	*hən jəŋ məŋ jəŋ
243	兇殘唔 兇殘	fierce	hoŋ ⁵⁵ ts ^h an ²¹ m̩ ²¹ hoŋ ⁵⁵ ts ^h an ²¹	*hoŋ ts ^h am hoŋ ts ^h an	*hoŋ ts ^h an məŋ ts ^h an
244	馨香唔 馨香	fragrant	heŋ ⁵⁵ həŋ ⁵⁵ m̩ ²¹ heŋ ⁵⁵ həŋ ⁵⁵	*heŋ həŋ heŋ həŋ	*heŋ həŋ meŋ həŋ
245	興起唔 興起	revive	heŋ ⁵⁵ hej ¹³ m̩ ²¹ heŋ ⁵⁵ hej ³⁵	*heŋ həŋ hej hej	*heŋ hej meŋ hej
246	響亮唔 響亮	loud	həŋ ³⁵ ləŋ ²² m̩ ²¹ həŋ ³⁵ ləŋ ²²	*həŋ ləŋ həŋ ləŋ	*həŋ ləŋ məŋ ləŋ
247	協調唔 協調	coordinate	hip ³ t ^h iw ²¹ m̩ ²¹ hip ³ t ^h iw ²¹	*hip t ^h im hip t ^h iw	*hip t ^h iw mip t ^h iw
248	黑暗唔 黑暗	dark	hək ⁵ ʔəm ³³ m̩ ²¹ hək ⁵ ʔəm ³³	*hək ʔəm hək ʔəm	*hək ʔəm mək ʔəm
249	學習唔 學習	learn	hək ² tsap ² m̩ ²¹ hək ² tsap ²	*hək tsam hək tsap	*hək tsap mək tsap
250	危險唔 危險	dangerous	əj ²¹ him ³⁵ m̩ ²¹ əj ²¹ him ³⁵	*ʔəj him ʔəj him	*ʔəj him məj him
251	矮小唔 矮小	short	əj ³⁵ siw ³⁵ m̩ ²¹ əj ³⁵ siw ³⁵	*ʔəj sim ʔəj siw	*ʔəj siw məj siw

252	翳焗唔 翳焗	stuffy	ɛj ³³ kok ² m̩ ²¹ ɛj ³³ kok ²	*ʔɛj kom ʔɛj kok	*ʔɛj kok məj kok
253	拗撬唔 拗撬	argue	aw ³³ kiw ²² m̩ ²¹ aw ³³ kiw ²²	*ʔaw kim ʔaw kiw	*ʔaw kiw maw kiw
254	嘔吐唔 嘔吐	vomit	ɛw ³⁵ t ^h ow ³³ m̩ ²¹ ɛw ³⁵ t ^h ow ³³	*ʔɛw t ^h om ʔɛw t ^h ow	*ʔɛw t ^h ow məw t ^h ow
255	暗淡唔 暗淡	dim	ɛm ³³ tam ²² m̩ ²¹ ɛm ³³ tam ²²	*ʔɛm tam ʔɛm tam	*ʔɛm tam məm tam
256	安全唔 安全	safe	ɔŋ ⁵⁵ ts ^h yn ²¹ m̩ ²¹ ɔŋ ⁵⁵ ts ^h yn ²¹	*ʔɔŋ ts ^h ym ʔɔŋ ts ^h yn	*ʔɔŋ ts ^h yn məŋ ts ^h yn
257	硬淨唔 硬淨	hard and strong	aŋ ²² tseŋ ²² m̩ ²¹ aŋ ²² tseŋ ²²	*ʔaŋ tsem ʔaŋ tseŋ	*ʔaŋ tseŋ maŋ tseŋ
258	昂貴唔 昂貴	expensive	ɔŋ ²¹ k ^w ɛj ³³ m̩ ²¹ ɔŋ ²¹ k ^w ɛj ³³	*ʔɔŋ k ^w ɛm ʔɔŋ k ^w ɛj	*ʔɔŋ k ^w ɛj məŋ k ^w ɛj
259	戇直唔 戇直	simple-minded	ɔŋ ²² tsek ² m̩ ²¹ ɔŋ ²² tsek ²	*ʔɔŋ tsem ʔɔŋ tsek	*ʔɔŋ tsek məŋ tsek
260	愕然唔 愕然	surprised	ɔk ² jin ²¹ m̩ ²¹ ɔk ² jin ²¹	*ʔɔk jim ʔɔk jin	*ʔɔk jin mək jin

APPENDIX IV

Transcription of m̄²¹-σ₁ phrases

Remarks:

1. The tone of illegal m̄²¹-σ₂ contraction is not shown because such contraction is impermissible under any circumstances regardless of tonal behavior.
2. A syllable without a corresponding Chinese character is indicated as ∅.

Item no.	Chinese Charac-ters	English Gloss (not-X)	Citation	m̄ ²¹ -σ ₁ contraction
1	唔 蝦	bully	m̄ ²¹ ha: ⁵⁵	*ma:
2	唔 下	go down	m̄ ²¹ ha: ²²	*ma:
3	唔 可	able	m̄ ²¹ hɔ: ³⁵	*mɔ:
4	唔 係	be	m̄ ²¹ hɛj ²²	*mɛj
5	唔 起	build	m̄ ²¹ hej ³⁵	*mej
6	唔 開	open	m̄ ²¹ hɔj ⁵⁵	*mɔj
7	唔 害	harm	m̄ ²¹ hɔj ²²	*mɔj
8	唔 去	go	m̄ ²¹ hɛɣ ³³	*mɛɣ
9	唔 考	take a test	m̄ ²¹ haw ³⁵	*maw
10	唔 孝	pious	m̄ ²¹ haw ³³	*maw

11	唔姣	coquettish	m̩ ²¹ haw ²¹	*maw
12	唔厚	thick	m̩ ²¹ hew ¹³	*mew
13	唔囂	arrogant	m̩ ²¹ hiw ⁵⁵	*miw
14	唔曉	know	m̩ ²¹ hiw ³⁵	*miw
15	唔好	good	m̩ ²¹ how ³⁵	*mow
16	唔好	interested in	m̩ ²¹ how ³³	*mow
17	唔豪	generous	m̩ ²¹ how ²¹	*mow
18	唔怯	timid	m̩ ²¹ hip ³	*mip
19	唔恰	bully	m̩ ²¹ hep ⁵	*mep
20	唔合	match	m̩ ²¹ hep ²	*mep
21	唔協	coordinate	m̩ ²¹ hip ³	*mip
22	唔乞	beg	m̩ ²¹ het ⁵	*met
23	唔嚇	frighten	m̩ ²¹ hak ³	*mak
24	唔黑	dark	m̩ ²¹ hek ⁵	*mek
25	唔學	learn	m̩ ²¹ hək ²	*møk
26	唔喊	cry	m̩ ²¹ ham ³³	*mam
27	唔鹹	salty	m̩ ²¹ ham ²¹	*mam
28	唔含	contain	m̩ ²¹ hēm ²¹	*mēm
29	唔謙	modest	m̩ ²¹ him ⁵⁵	*mim
30	唔欠	owe	m̩ ²¹ him ³³	*mim
31	唔勸	convince	m̩ ²¹ hyn ³³	*myn

32	唔慳	frugal	m̩ ²¹ han ⁵⁵	*man
33	唔恨	hate	m̩ ²¹ hən ²²	*mən
34	唔痕	itchy	m̩ ²¹ hən ²¹	*mən
35	唔寒	chilly	m̩ ²¹ hən ²¹	*mən
36	唔行	walk	m̩ ²¹ haŋ ²¹	*maŋ
37	唔肯	willing	m̩ ²¹ hɛŋ ³⁵	*mɛŋ
38	唔輕	light (weight)	m̩ ²¹ heŋ ⁵⁵	*meŋ
39	唔 Ø	hot/ angry	m̩ ²¹ heŋ ³³	*meŋ
40	唔興	popular	m̩ ²¹ heŋ ⁵⁵	*meŋ
41	唔空	empty	m̩ ²¹ hoŋ ⁵⁵	*moŋ
42	唔兇	fierce	m̩ ²¹ hoŋ ⁵⁵	*moŋ
43	唔紅	red	m̩ ²¹ hoŋ ²¹	*moŋ
44	唔香	fragrant	m̩ ²¹ hœŋ ⁵⁵	*mœŋ
45	唔響	loud	m̩ ²¹ hœŋ ³⁵	*mœŋ
46	唔啞	mute	m̩ ²¹ a: ³⁵	*ma:
47	唔餓	hungry	m̩ ²¹ ɔ: ²²	*mɔ:
48	唔捱	have a hard time	m̩ ²¹ aɪ ²¹	*maj
49	唔噏	scream	m̩ ²¹ aɪ ³³	*maj
50	唔危	dangerous	m̩ ²¹ ɛɪ ²¹	*mɛɪ
51	唔矮	short	m̩ ²¹ ɛɪ ³⁵	*mɛɪ

52	唔愛	love	m̩ ²¹ ɔj ³³	*məj
53	唔滄	cook (soup)	m̩ ²¹ aw ²¹	*maw
54	唔拗	argue	m̩ ²¹ aw ³³	*maw
55	唔嘔	vomit	m̩ ²¹ ɛw ³⁵	*məw
56	唔噏	utter	m̩ ²¹ ɛp ⁵	*məp
57	唔押	catch	m̩ ²¹ at ³	*mat
58	唔壓	stink	m̩ ²¹ at ³	*mat
59	唔愕	surprised	m̩ ²¹ ɔk ²	*mək
60	唔惡	fierce	m̩ ²¹ ɔk ³	*mək
61	唔啱	correct	m̩ ²¹ am ⁵⁵	*mam
62	唔 Ø	to cover up	m̩ ²¹ ɛm ³⁵	*məm
63	唔暗	dim	m̩ ²¹ ɛm ³³	*məm
64	唔晏	late	m̩ ²¹ an ³³	*man
65	唔𠵼	skinny	m̩ ²¹ ɛn ⁵⁵	*mən
66	唔安	safe/ peaceful	m̩ ²¹ ɔn ⁵⁵	*mən
67	唔硬	hard	m̩ ²¹ aŋ ²²	*maŋ
68	唔 Ø	earsore	m̩ ²¹ ɛŋ ³⁵	*maŋ
69	唔戇	idiotic	m̩ ²¹ ɔŋ ²²	*məŋ

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