



# Cross-Linguistic Influence in Hong Kong ESL Learners' Acquisition of Conjunctions

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## Abstract

Language transfer is one of the most significant aspects of cross-linguistic influence. It can be divided into two types: positive and negative, the beneficial and detrimental use of one language's acquired characteristics in another. This study aims to investigate the L1 (Chinese) influence on Hong Kong ESL learners' acquisition of conjunctions and whether the use of L1 has an impact on this influence. An online questionnaire combining questions about students' English learning experience and a grammatical judgement task was sent to a government-funded secondary school in Hong Kong and completed by 79 students. Evidence of both positive and negative transfer from Chinese to English was found by testing six conjunctions or conjunction pairs: *although...but*, *because...so*, *not only...but also*, *either...or*, *neither...nor*, and *despite*. The results suggest that Chinese is likely to have an impact on students' acquisition of conjunctions, and the use of Chinese in English classes can worsen negative transfer and boost positive transfer. The degree of transfer might increase when more Chinese is used in class. To alleviate the impact of Chinese transfer and to provide more effective L2 teaching, monitoring the use of L1 and regular evaluation might be useful. Teachers can also adjust the amount of Chinese used according to the students' English proficiency level.

**Keywords** Cross-linguistic influence · Language transfer · Conjunctions · Hong Kong · ESL learners

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## 1 Introduction

Hong Kong (HK) is an international city with a unique culture combining Chinese tradition and British values. Whereas Chinese (Cantonese<sup>1</sup>) is the dominant language in HK, English is the official language, adopted during the British colonial period (1841–1997). It is compulsory for HK students to start learning English as a second language (L2) at school from the age of six, for at least four to six hours per week (Hu & McKay 2012; Nunan 2003), and grammar is a key aspect of L2 teaching (Ellis 2015). To ensure students understand English grammatical rules or vocabulary, to save class time, and to encourage student participation, especially that of lower English proficiency students, Chinese is frequently used during English classes (Lin 1990; Wong 2020). Melby-Lervåg & Lervåg (2011) propose that giving instruction in both L1 and L2 can make transfer, both positive and negative, more likely. In fact, the previous literature has already demonstrated that L1 has an influence on second language acquisition (SLA) (Nazary 2008; Storch & Wigglesworth 2003). However, only limited research has examined the L1 (Chinese) influence on English-as-a-second-language (ESL) learners' acquisition of conjunctions (Chan 2004a, 2010; Tseng & Liou 2006). Therefore, in this study, we aim to find out the extent to which L1 (Chinese) has an influence on HK ESL learners' acquisition of conjunctions and whether the use of L1 has an impact on this influence.

## 2 Cross-linguistic Influence

Kellerman and Sharwood-Smith (1986) define cross-linguistic influence as an "interplay between earlier and later acquired languages" (p.25). In other words, the acquisition of grammar, vocabulary, and pronunciation can be influenced by the similarities and differences between the target language and any formerly acquired language (Odlin 1989). For many HK ESL learners, Chinese is the first language that they acquire while English is the target language. According to Lado's Contrastive Analysis Hypothesis (1957), the greater the differences between the learners' L1 and L2, the harder it is for them to learn the L2, and vice versa. Melby-Lervåg and Lervåg (2011) further suggest that structural similarities and differences between two languages can, respectively, accelerate and impede L2 acquisition.

### 2.1 Language Transfer

Transfer, as a kind of cross-linguistic influence, occurs when one language is more dominant than the other in bilingual educational settings (Kidd et al. 2015; Yan & Matthews 2017; Yip & Matthews 2000). For example, Chinese-dominant bilingual children tend to misidentify the head referent in English relative clauses because of

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<sup>1</sup> Cantonese, a Chinese dialect, is the mother tongue of most HK ESL learners. Although Cantonese can be written in informal settings, Traditional Chinese is the written form used at school and in other official settings. The word "Chinese" used throughout this article refers to spoken Cantonese and written Traditional Chinese, which share grammatical and syntactic features with Chinese-Mandarin.

syntactic transfer from the prenominal structure of relative clauses in both Cantonese and Mandarin to English (Kidd et al. 2015; Yan & Matthews 2017).

Learning English at an early age gives HK ESL learners a bilingual learning experience: they learn English at school while mostly using their L1, Chinese, in their daily life (Nunan 2003) because most of their parents are native Chinese speakers. Melby-Lervåg and Lervåg (2011) point out that students receiving bilingual teaching tend to be better at identifying linguistic patterns, enabling transfer. Therefore, the situation of HK ESL learners is comparable with bilingual students in other contexts where transfer is likely to occur during their L2 acquisition process. In fact, several studies illustrate that syntactic transfer from L1 to L2 can be seen among different ESL learners, especially at the early stages of L2 acquisition (Berman 1994; Chan 2004a, 2004b; Chen 2006; Grami & Alzughaihi 2012). Yang et al. (2017) further suggest that the proficiency of students' L1 might affect the degree of language transfer, especially if students are still developing their L1. However, research on language transfer between HK ESL learners' L1 and L2 is rather limited. Thus, it is worth investigating the extent of the influence of Chinese on English acquisition.

## 2.2 Positive and Negative Transfer

There are two kinds of transfer: positive and negative transfer (Cook 2016; Larsen-Freeman 1991). Positive transfer occurs when the two languages are similar; it facilitates language acquisition, and is largely invisible. Negative transfer occurs when there are differences between the two languages; it impedes language acquisition, and is visible, manifesting in specific error types (Cook 2006; Larsen-Freeman 1991).

Positive transfer can also occur when two languages are not apparently similar. For example, although there are many differences between Chinese and English, Yip and Matthews (2007) notice that there are some similarities and potential for positive transfer from Chinese to English, such as the same word order (SVO), in both Chinese and English. Compared to positive transfer, negative transfer is more likely to be discovered and examined in cross-linguistic studies because of its visibility.

Negative transfer is especially common in relation to grammar and translation (Liu & Yan 2022). Due to the lack of cross-linguistic equivalence between languages, such as syntax and vocabulary, translations can be difficult (Odlin 2005). Therefore, approximations are sometimes used by translators to preserve the meaning of the text (Hung 2022). In fact, as briefly mentioned in the Introduction, Chinese translation is often used in English classrooms to facilitate learning not only by teachers, but also by students. Studies (Chan 2004b; Yang 2019) show that many Chinese students think in Chinese before writing in English, leading to errors. Therefore, the influence of Chinese is unignorable when students construct sentences. For instance, because of negative syntactic transfer from Chinese, ESL learners tend to put the intensifying adverb "very" before the verb to show the degree of meaning (e.g. I very agree with that idea).

As discussed above, it is likely that negative transfer among HK ESL learners can be associated with differences in clause placement. Conjunctions are usually used to link clauses in English sentences, and their choice and usage by HK ESL learners may be subject to negative transfer because of Chinese syntax. Therefore, a study of Chinese influence on HK ESL learners' conjunction acquisition is needed to further examine the relationship between students' L1 and L2 acquisition.

To further distinguish between types of transfer observed, we propose the classification of transfer as explicit or implicit based on the presence or absence of dominance in the relationship between the two languages. In this study, transfer observed without the appearance of Chinese translation but potentially caused by students' L1 knowledge would be called implicit transfer. Transfer observed with the presence of Chinese translation would be called explicit transfer.

### 3 Misuse of Conjunctions

Misuse of conjunctions is a common phenomenon among HK ESL and other EFL learners (Chan 2010; Tseng & Liou 2006). After analysing more than 300 free writings by HK ESL students, Chan (2010) concludes that HK ESL students often revert to their L1 sentence structures when they write in English. She also found that misuse of conjunctions is one of the most frequent errors among students, and suggested that Chinese influence might be a reason for conjunction misuse.

Even though Tseng and Liou (2006) argue that the misuse of conjunctions is more likely to be caused by interlanguage developmental errors (relying on one's L1 knowledge or overgeneralising the target language (Fauziati 2011)) than the influence of Chinese, they illustrate that syntactic structural differences between Chinese and English seem to have an impact on HK ESL students' English writing. For example, run-on sentences are acceptable in Chinese but not in English.

#### 3.1 Conjunctions

Conjunctions are a type of cohesive device that serves to help join clauses and produce coherent text (Carrell 1982). These words are grammatical tools that are used to indicate the relations between and within sentences, be it reinforcement (e.g. *also*), opposition (e.g. *although*), causality (e.g. *because*), or temporal relationships (e.g. *while*), which enhance readers' ability to interpret a text (Tseng & Liou 2006). Using appropriate conjunctions between clauses and sentences is a way to augment the cohesion of the text and help readers' interpretation thereof. Therefore, it is essential for ESL learners to learn about conjunctions in order to obtain effective writing competency in English.

### 3.2 Use of Conjunctions in Chinese and English

Cohesion is important in both Chinese<sup>2</sup> and English (Liu & Qi 2010; Liu & Wang 2013; Yang 2014); however, the ways of forming coherent discourse are different in each language. English tends to use cohesive devices, such as connectives and conjunctions, to maintain cohesion, while cohesion in Chinese is established primarily through word meanings and repetition, and therefore, fewer conjunctions are used in Chinese discourse than in English.

Yang (2014) believes that the main area of contrast between Chinese and English cohesion construction is the use of parataxis and hypotaxis. The situation where two clauses have equal status and both are independent is called parataxis. If two clauses have unequal status (a main or dominant clause and a subordinate clause), this is called hypotaxis (Li & Yu 2021). Yang (2014) explains that, due to the prominence of hypotactic structures in English, explicit cohesive devices, such as conjunctions and connectives, are used to create coherence; however, Chinese creates cohesion implicitly.

Although Xi (2010) questions the idea that parataxis and hypotaxis are the reason for the different frequency of conjunction use between Chinese and English, he agrees that conjunctions are used more in English than in Chinese. However, because of the comparatively low frequency of conjunctions in Chinese and the differences in the use of cohesive devices between Chinese and English, it might be difficult for HK ESL learners to adapt their use of conjunctions from one language to another. This might potentially increase the chance of negative transfer from their L1.

Chan (2004a) explains that due to differences in clause status between Chinese and English, complex sentences can be formed without conjunctions in Chinese but not in English. This is because, in Chinese, both main and subordinate clauses have equal status, while they are unequal in English. This assertion echoes Yang's statement (2014) that Chinese has a paratactic structure by which cohesion can be created implicitly, without the use of conjunctions. She goes further to say that because of the symmetrical status of Chinese clauses, double conjunctions are common and grammatically acceptable in Chinese but not in English. For example,

- (1) 雖然<sup>3</sup>我很困,但是我睡不著。

*Although* I am sleepy (**subordinate clause**) *but* I cannot fall asleep (**subordinate clause**).

- (2) 因為我生病了,所以我不能上學。

*Because* I am sick, *so* I cannot go to school.

In contrast, in English, subordinate clauses are grammatically dependent and cannot stand alone. Therefore, sentences (1) and (2) are incorrect because *although* and *but*

<sup>2</sup> As Cantonese is a Chinese dialect, and it shares grammatical and syntactic features with Mandarin, the characteristics describing Chinese are applicable to Cantonese.

<sup>3</sup> Equivalent Chinese/English words are underlined.

and because and so are subordinate conjunctions with no main clauses. While this is unacceptable in English, it is commonly seen in Chinese English learners' writings.

Despite the differences between the use of conjunctions in Chinese and English, they do share some similarities. In both Chinese and English, compound sentences are divided into different relationships based on different structures—parallel, coordinating, progressive, choice, and conditional (Wei & Chen 1991). For instance,

Choice:

(C) 你要麼煮飯, 要麼叫外賣。

You can *either* cook *or* order some takeaway.

Parallel:

(D) Zoe不但英語好, 而且數學也不錯。

Zoe is *not only* good at English, *but* she is *also* good at Maths.

Thus, due to the similarities and differences in sentence structure, it is likely that Chinese has an influence on English learners' acquisition of conjunctions.

From the above, we can see that differences in the importance and frequency of use of cohesive devices and differences in sentence structure between Chinese and English can contribute to the Chinese influence on L2 learning. Moreover, there is no consensus regarding the importance of the role L1 plays in students' L2 conjunction acquisition. Furthermore, none of the previous studies has focused on and investigated the linkage between Chinese and conjunction misuse among HK ESL students. Therefore, a further investigation is needed to enhance approaches towards HK ESL teaching and learning in the future.

## 4 Research Questions

In this study, we aim to find out:

- (1) To what extent does L1 (Chinese) syntax have an influence on Hong Kong ESL learners' acquisition of conjunctions?
- (2) Does the use of L1 have an impact on this influence?

## 5 Methodology

An online questionnaire, which consists of two parts: (1) questions regarding students' experience of learning English and (2) a short grammatical judgement task (GJT), was delivered through Qualtrics to about 110 students in a HK government-funded secondary school.

1. Students were asked about their English learning experience at school, for example the duration of their English learning, the languages used and the frequency

- of use both inside and outside the English classroom. Comparing the frequency of Chinese used in classrooms and any transfer that may be observed in the GJT allows us to infer whether the use of Chinese has an impact on language transfer.
2. GJTs require the use of metalinguistic knowledge that is acquired unconsciously (Lust & Blume 2016), and can be used to measure learners' language proficiency (Kwon 2018). The GJT was divided into 2 sections, testing the six conjunctions/conjunction pairs, *although...but*, *because...so*, *either...or*, *neither...nor*, *not only...but also*, and *despite*, and they are tested multiple times with different sentence structures. The six conjunctions/conjunction pairs were selected as they represented different relationships between the compound sentences and included sentence structures that are similar and different to Chinese. To examine participants' acquired knowledge, only English sentences were given in the first section. In the second section, to recreate the experience of being exposed to both Chinese and English in the classroom, and to investigate the Chinese influence on English, Chinese translations were added (see Sect. 5.2.). Participants were asked to determine whether the English sentences were grammatically correct or not.

This project was reviewed and approved by the University of St Andrews Child Panel Representative and ethics committee before data collection commenced. Therefore, the project procedure is considered ethical, and both the lead researcher and the participants are protected.

## 5.1 Context and Participants

Due to the geographical distance between the research site (HK) and where the researchers are based (the UK) and the limited access to HK students, convenience sampling was used. Participants were recruited from a government-funded secondary school which is a Chinese medium of instruction (CMI) school with some English medium of instruction (EMI) subjects, such as Maths and Integrated Science for Form 1 (equivalent to Year 7 in the UK), and some electives (e.g. economics, biology and chemistry) for senior forms. They are from eight different classes of different school years and taught by five teachers. With reference to Part 1 of the questionnaire, the largest group of participants are from Form 3 (equivalent to Year 9 in the UK), with 22 responses, while the smallest group of participants are from Form 4 (equivalent to Year 10 in the UK), with only 3 responses. Due to insufficient samples from Form 4, their responses could not be analysed and discussed. As a result, only 79 responses in total, from Forms 1–3 and Form 5, were presented.

## 5.2 Grammatical Judgement Task

The GJT was divided into 2 sections, testing six conjunctions/conjunction pairs, *although...but*, *because...so*, *either...or*, *neither...nor*, *not only...but also*, and *despite* multiple times with two sentence structures, A and B. Sentences with Structure A are correct in English, but not in Chinese. While Structure B sentences are similar to Chinese structure, they are not necessarily correct in English.

In the first section of the GJT, 34 English sentences, including the six conjunctions/conjunction pairs above, were given. In the second section, 33 English sentences with Chinese translations were presented. To help participants focus solely on conjunction errors, the sentences were designed and contrived without other types of grammatical error.

Below are examples of Structures A and B from the first and second sections of the task:

**Example (1)** Structure A is correct in English but not in Chinese. Structure B is similar to Chinese structure, and it is correct in Chinese but not in English.

1st Section:

Structure A: She did not like the job *although* the salary was high.

Structure B: *Although* it is cold, *but* he goes out in shorts. (Incorrect)

2nd Section:

Structure A: 雖然<sup>4</sup>Peter身材高大, 但是他也碰不到櫥櫃的頂部。

*Although* Peter is tall, even he cannot reach the top of the cupboard.

Structure B: 雖然Jenny錯過了那班車, 但是她並沒有遲到。

*Although* Jenny missed the bus, *but* she was not late. (Incorrect)

**Example (2)** Structure A is correct in English but not in Chinese. Structure B is similar to Chinese structure, and it is correct in both Chinese and English.

1st Section:

Structure A: *Either* you help your mum do the laundry *or* you help me clean the garage.

<sup>4</sup> Equivalent Chinese /English words are underlined.



Structure B: We can *either* go to Loch Ness, where the Loch Ness monster, supposedly, lives, *or* Glenfinnan Viaduct, where Harry Potter was filmed.

2nd Section:

Structure A: 這個夏天, 我們要麼去夏威夷, 要麼去馬爾代夫浮潛和潛水。<sup>5</sup>

*Either* Hawaii *or* Maldives is where we are going for snorkelling and scuba-diving this summer.

Structure B: Kelly要麼自己洗碗, 要麼讓媽媽洗碗。

Kelly *either* does her dishes on her own *or* asks her mother to do them.

### 5.3 Validity and Reliability

To avoid bias, English sentences were given on their own in the first part of the GJT. The structures of these sentences were the same as those of the sentences in the second part of the task (Chinese sentences were added). Also, student participants were tested on each conjunction/conjunction pair multiple times in the GJT to ascertain whether they understood the correct usage or were guessing at random. The first part of the GJT acted as a control enabling us to see participants' mastery of different conjunctions/conjunction pairs without the explicit intervention of Chinese. The participants were of mixed level and background and were taught by five different teachers. This made our sample more representative of HK as a whole. Furthermore, sentences in the GJT were presented to one of the school's experienced English teachers to ensure the content had been taught. Therefore, the participants should have had knowledge of what was tested, and the errors should not be due to unknown linguistic features. The questionnaire, the GJT, and the analysis were checked and viewed by the first author, who is a native Chinese speaker, and the second author, who is a native English speaker, to ensure their validity and reliability.

### 5.4 Data Analysis

The data were collected through Qualtrics because it provided a full report which contains mean, standard deviation, percentages, and bar charts for each question. Therefore, the first stage of data analysis was to go through the report and identify useful or significant findings according to the participants' school years. For the data

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<sup>5</sup> “*Either*” and “*or*” can have different meanings in Chinese and can be used separately. However, here, they serve the same meaning (choosing between two choices/possibilities).

gathered from the first part, questions about students' English learning experience, the Qualtrics output was used. While the data from the first part was important for us to gain an understanding of the students' background and the standard ESL teaching practice in Hong Kong, it was the data from the second part that enabled us to investigate the research questions. The accuracy rate for each question from the GJT was extracted to Excel. Through Excel, the students' mean accuracy for the six tested conjunctions or conjunction pairs and the students' mean accuracy for the A and B structures were computed. In addition, the standard deviations were calculated, so as to obtain the *P*-values to measure the confidence when comparing averages.

## 6 Results

### 6.1 Questionnaire

Among the three languages, Cantonese, English, and Mandarin, Cantonese is the language that students are most confident in. Even though most of the students have seven or more years of English learning experience, they do not consider themselves proficient in English. Moreover, English grammar seems to be emphasised in the school. Half of the students reveal that new grammar concepts are explained by their English teachers at least twice a week. Some of the students stated that they see new grammar concepts on a daily basis.

Furthermore, participants from junior forms, Forms 1 to 3, suggested that English is the dominant language in the English classroom, and the frequency of English use increases along with the year and level of study. This phenomenon might be due to the increase in English competency that reduces the need for Chinese assistance. However, senior form students, from Form 5, suggested the opposite. They reported that Chinese is used more often in English classes. Thus, the frequency of English use in class could also be due to the different teaching habits and styles of different English teachers or teachers' adjustments according to the English level of each class. Despite the differences between junior and senior forms, most of the participants assert that their English teachers switch between L1 and L2 when explaining grammar concepts.

### 6.2 Grammatical Judgement Task

In the grammatical judgement task, we tested six conjunctions/conjunction pairs: *although...but*, *because...so*, *not only...but also*, *either...or*, *neither...nor*, and *despite*. We looked for evidence of negative or positive transfer from the sentences.

The following tables display the average (avg) percentage of students getting Structures A and B correct. They also show the *P*-values between Structures A and B for conjunction with or without Chinese. *P*-value A and *P*-value B refer to the comparison between the use of Structures A and B with and without Chinese.

**Table 1** Average accuracy rate for Structures A and B for conjunction pair–*although...but*

Conjunction pair	Form	Structure A (Eng only) Avg Correct %	Structure A (w/ Chinese) Avg Correct %	P-value A	P-value (Btw Structure A&B Eng only)
<i>Although/but</i>	1	76.25	71.67	0.267	<0.001
	2	75	66.67	0.002	<0.001
	3	86.36	69.7	0.029	<0.001
	5	72.62	71.43	0.687	<0.001
Conjunction pair	Form	Structure B (Eng Only) Avg Correct %	Structure B (w/ Chinese) Avg Correct %	P-value B	
<i>Although/but</i>	1	40	30	<0.001	
	2	41.18	44.12	0.489	
	3	72.73	68.18	0.112	
	5	47.62	26.19	0.002	

### 6.2.1 Although...But

In this section, Structure A contains either *although* or *but* in the sentence. It is a correct sentence structure in English but not in Chinese. Structure B contains both *although* and *but* in the sentence. It is grammatically incorrect in English but correct in Chinese. For example,

1st Section:

Structure A: She did not like the job *although* the salary was high.

Structure B: *Although* it is cold, *but* he goes out in shorts. (Incorrect)

2nd Section:

Structure A: 雖然樓上的鄰居在大聲地爭吵,但是我很快就睡著了。

I fell asleep quickly, although the upstairs neighbours were arguing loudly.

Structure B: 雖然薯條很美味,但是並不健康。

*Although* French fries are tasty, *but* they are not good for our health. (Incorrect)

Table 1 shows that when only English sentences are given, on average, only around 42% of the students across all forms get the correct answer for Structure B. They think that it is right to use *although* and *but* together. All the *P*-values between Structures A and B, without Chinese appearance, are smaller than 0.001 ( $p < 0.001$ ). This suggests the differences between Structures A and B are not believed to be by chance and negative transfer might exist here. When Chinese is added, the overall accuracy for Structure B decreases, especially for Form 5. This might imply that the addition of Chinese creates confusion between the Chinese and English sentence structures. Therefore, we can infer that there is a likelihood of negative transfer from L1 here. The results of Form 1 ( $p < 0.001$ ) and 5 ( $p = 0.002$ ) are valid and statistically significant.

### 6.2.2 Because...So

In this section, Structure A contains either *because* or *so* in the sentence. It is a correct sentence structure in English but not in Chinese. Structure B contains both *because* and *so* in the sentence. It is grammatically incorrect in English but correct in Chinese. For example,

1st Section:

Structure A: The concert was postponed *because* a typhoon hit the city.

Structure B: *Because* Covid-19 is prevalent, *so* we are not able to travel.  
(Incorrect)

2nd Section:

Structure A: 因為我們整天在家度過, 所以我們沒有看到皇室成員。

We did not see the royals *because* we spent the day at home.

Structure B: 因為John生病了, 所以他沒有上學。

*Because* John was sick, *so* he did not come to school. (Incorrect)

As shown in Table 2, when only English sentences are given, on average, only around 47% of the participants can identify that the structure is grammatically incorrect in English. All the *p*-values between Structures A and B are  $< 0.001$ . This suggests that negative transfer from L1 might exist here. Furthermore, when Chinese is added, the overall average accuracy rate for Structure B drops by more than 10%. This means that Chinese might have an influence on students' accurate use of the

**Table 2** Average accuracy rate for Structures A and B for conjunction pair—*because...so*

Conjunction pair	Form	Structure A (Eng Only) Avg Correct %	Structure A (w/ Chinese) Avg Correct %	P-value A	P-value (Btw Structure A&B Eng only)
<i>Because/so</i>	1	75.00	67.5	<0.001	<0.001
	2	79.41	76.47	0.01	<0.001
	3	75	84.09	<0.001	<0.001
	5	64.29	78.57	<0.001	<0.001
Conjunction pair	Form	Structure B (Eng Only) Avg Correct %	Structure B (w/ Chinese) Average Correct %	P-value B	
<i>Because/so</i>	1	55	30	<0.001	
	2	38.24	32.35	0.08	
	3	52.27	43.18	0.016	
	5	42.86	26.19	<0.001	

conjunctions *because* and *so*. The results of Form 1 ( $p < 0.001$ ), Form 3 ( $p = 0.016$ ), and Form 5 ( $p < 0.001$ ) on Structure B suggest that the differences are not random in nature and transfer is likely.

### 6.2.3 Either...Or

In this section, Structure A places *either...or* at the beginning of the sentence. It is a correct sentence structure in English but not in Chinese. Structure B places it after the subject is introduced. This structure is grammatically correct in both English and Chinese. For example,

1st Section:

Structure A: *Either* you help your mum do the laundry *or* you help me clean the garage.

Structure B We can *either* go to Loch Ness, when the Loch Ness monster, supposedly, lives, *or* Glenfinnan Viaduct, where Harry Potter was filmed.

2nd Section:

Structure A: Susan或Jessie有信箱的鑰匙。<sup>6</sup>Either Susan *or* Jessie has the key to the letter box.

<sup>6</sup> In these two Chinese examples, “*either*” can be eliminated in Chinese after the subject has been introduced.

**Table 3** Average accuracy rate for Structures A and B for conjunction pair—*either... or*

Conjunction pair	Form	Structure A (Eng Only) Avg Correct %	Structure A (w/ Chinese) Avg Correct %	P-value A	P-value (Btw Structure A&B Eng only)
<i>Either/or</i>	1	58.33	75	<0.001	0.249
	2	70.59	68	0.627	<0.001
	3	75.76	80	0.061	0.001
	5	69.84	74	0.275	0.55
Conjunction pair	Form	Structure B (Eng Only) Avg Correct %	Structure B (w/ Chinese) Avg Correct %	P-value B	
<i>Either/or</i>	1	65	67.5	0.114	
	2	47.06	67.65	<0.001	
	3	68.18	65.91	0.282	
	5	71.43	76.19	0.121	

Structure B: Sandy將會在下個學期學習化學或生物學。 Sandy will take *either* chemistry *or* biology in the next semester.

Table 3 shows that when only English sentences are provided, the accuracy rate for Structure B is mostly more than 60% while the accuracy rate for Structure A is slightly higher. The results of Form 2 ( $p < 0.001$ ) are statistically significant apart from Structure A. It shows that there is a 20% increase in the accuracy rate with the appearance of Chinese. Structure A still has a higher accuracy rate than Structure B even though Structure A is different from the Chinese structure. This suggests that, for conjunction *either...or*, students tend to be more accurate when the sentence structure does not match with the Chinese one.

#### 6.2.4 Neither...Nor

In this section, Structure A places *neither...nor* at the beginning of the sentence. It is a correct sentence structure in English but not in Chinese. Structure B places it after the subject is introduced. This structure is grammatically correct in both English and Chinese. For example,

1st Section:

Structure A: *Neither* Spanish nor Italian is understandable to them.

Structure B: They speak *neither* Mandarin *nor* Cantonese, but they do speak English.

2nd Section:

Structure A: 土耳其和烏克蘭都不是歐洲聯盟的成員。<sup>7</sup>

*Neither Turkey nor Ukraine is a member of the European Union.*

Structure B: 她的生日既不是9月18日,也不是9月19日。

Her birthday is *neither* the eighteenth *nor* the nineteenth of September.

Similar to the results of the conjunction pair above, *either...or*, the average accuracy rate for Structure A is about 67% while it is only around 60% for Structure B (Table 4). When Chinese is added, the average accuracy rate for both structures increases. This indicates that students are more likely to get it right when the sentence structure is different from Chinese. However, the increase in the accuracy in Structure B is higher than that of Structure A for Form 3 and Form 5 ( $p < 0.001$ ). Positive transfer might still exist here when Chinese is added.

### 6.2.5 Despite

In this section, Structure A places *despite* after the subject is introduced. It is a correct sentence structure in English but not in Chinese. Structure B places it at the beginning of the sentence. This structure is grammatically correct in both English and Chinese. For example,

1st Section:

Structure A: We cooked our meal *despite* only having half of the ingredients.

Structure B: *Despite* the terrible weather, we still had a picnic.

2nd Section:

Structure A: 雖然他的日程很忙,但是他總會在星期日和孩子們一起玩。He always plays with his children on Sunday *despite* his busy schedule.

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<sup>7</sup> Nothing is underlined in this phrase as “neither” (既不是) cannot be placed at the beginning of a Chinese sentence. A better translation of this Chinese sentence is “Turkey and Ukraine are not members of the European Union”.

**Table 4** Average accuracy rate for Structures A and B for conjunction pair—neither...nor

Conjunction pair	Form	Structure A (Eng Only) Avg Correct %	Structure A (w/ Chinese) Avg Correct %	P-value A	P-value (Btw Structure A&B Eng only)
Neither/nor	1	57.5	85	<0.001	<0.001
	2	73.53	64.71	0.022	<0.001
	3	79.55	84.1	<0.001	<0.001
	5	57.14	66.67	0.032	0.521
Conjunction pair	Form	Structure B (English Only) Avg Correct %	Structure B (w/ Chinese) Avg Correct %	P-value B	
Neither/nor	1	62.5	62.5	1	
	2	52.94	64.71	<0.001	
	3	70.45	88.64	<0.001	
	5	54.76	69.05	<0.001	

Structure B: 儘管水很冷，許多學生還是跳入海中。*Despite* the freezing water, many students jumped into the sea.

When only English is given, the average accuracy rate for Structures A and B is very similar, around 64% and 65% respectively (Table 5). When Chinese is added, the average accuracy in relation to both structures increases, and the average correctness of the structures are still similar, about 76% and 72%. Although there is an increase in the accuracy rate for both structures, the *P*-values indicate that only that for Structure B is statistically significant. Hence, positive transfer might exist here.

### 6.2.6 Not Only...But Also

In this section, Structure A places *not only...but also* at the beginning of the sentence. It is a correct sentence structure in English but not in Chinese. Structure B places it after the subject is introduced. This structure is grammatically correct in both English and Chinese. For example,

1st Section:

Structure A: *Not only* can Bowie speak Cantonese, *but also* English.

Structure B: Chris can *not only* play the piano, *but* he can *also* play the violin.

2nd Section:



**Table 5** Average accuracy rate for Structures A and B for conjunction—*despite*

Conjunction pair	Form	Structure A (Eng Only) Avg Correct %	Structure A (w/ Chinese) Avg Correct %	<i>P</i> -value A	<i>P</i> -value (Btw Structure A&B Eng only)
<i>Despite</i>	1	65	82.5	<0.001	<0.001
	2	61.76	70.59	<0.001	<0.001
	3	63.64	84.09	<0.001	0.147
	5	64.29	66.67	0.375	0.375
Conjunction pair	Form	Structure B (Eng Only) Avg Correct %	Structure B (w/ Chinese) Avg Correct %	<i>P</i> -value B	
<i>Despite</i>	1	55	67.5	<0.001	
	2	76.47	67.65	<0.001	
	3	61.36	81.82	<0.001	
	5	66.67	69.05	<0.001	

**Structure A:**

倫敦不僅是英國的首都，而且還是女王居住的地方。*Not only* is London the capital of the UK, *but* it is *also* where the queen lives.

**Structure B:** Ming不僅成績優異，而且還是運動健將。Ming *not only* has good academic results, *but* he is *also* good at sports.

As given in Table 6, when only English sentences are given, an average of 60% of students get the right answer for Structure A. The accuracy rate for Structure A is around 5% higher than that of Structure B. However, when Chinese is added, the accuracy rate for Structure B increases by 13% (Table 6), a higher increase than that of Structure A. Moreover, all the *P*-values for B are <0.05 which means that the increase in the accuracy with the appearance of Chinese is not likely to happen by chance.

## 7 Discussion

This study aims to investigate the extent of L1 influence on HK ESL learners' acquisition of conjunctions and whether the use of L1 has an impact on this influence. Data were collected by sending an online questionnaire, combining questions about students' English learning experience and a GJT, to Forms 1 to 3, and Form 5 students in a HK secondary school. Six conjunctions/conjunction pairs (*although...but*, *because...so*, *not only...but also*, *either...or*, *neither...nor*, and *despite*) were tested multiple times with different sentence structures. From the findings, signs of language transfer are observed and discussed in the following sections.

**Table 6** Average accuracy rate for Structures A and B for conjunction pair—*not only...but also*

<i>Not only/but also</i>	Form	Structure A (Eng Only) Avg Correct %	Structure A (w/ Chinese) Avg Correct %	<i>P</i> -value A	<i>P</i> -value (Btw Structure A&B Eng only)
<i>Not only/but also</i>	1	50	67.5	0.007	0.535
	2	61.76	55.88	0.452	0.694
	3	68.18	79.55	0.012	0.019
	5	61.9	71.43	0.043	0.001
Conjunction pair	Form	Structure B (English Only) Avg Correct %	Structure B (w/ Chinese) Avg Correct %	<i>P</i> -value B	
<i>Not only/but also</i>	1	65	70	0.005	
	2	58.82	50	<0.001	
	3	56.82	79.55	<0.001	
	5	45.24	78.57	<0.001	

## 7.1 Research Question 1: To What Extent Does L1 (Chinese) Syntax Have an Influence on Hong Kong ESL Learners' Acquisition of Conjunctions?

### 7.1.1 Implicit Negative Transfer

In the first part of the task, we aim to examine implicit transfer, transfer observed without the presence of Chinese but potentially caused by students' L1 knowledge, by providing English sentences only. Previous scholars suggest that syntactic transfer from L1 to L2 can be found among ESL learners (Berman 1994; Chan 2004b; Chen 2006; Grami & Alzughaihi 2012). Chan (2004a) and Chan (2010) further indicate that due to the differences in clause status between English and Chinese, double conjunctions are commonly seen and grammatically correct in Chinese but not in English. Therefore, using double conjunctions in English would be an example of negative transfer from Chinese to English. The findings of this study agree with the previous studies.

Two examples of double conjunctions in common use are: *although...but* and *because...so*. From the findings, we can see that, even without the explicit intervention of Chinese (i.e. the task only presents English language input), half of the students think that the use of *although...but* and *because...so* are grammatically correct in English. This suggests that conjunction use in their L1 has an impact on their acquisition of conjunctions. As mentioned in the findings, students tend to rely on their existing linguistic knowledge from their L1 or overgeneralise the target language when facing grammatical difficulties (Fauziati 2011). In the GJT, students reported that they were unsure about their answers. They may, therefore, have been more likely to rely on the grammatical patterns of their L1. This means that the errors made in part one of the task are likely to be caused by implicit negative transfer. Through implicit transfer, students conflate Chinese grammar (in which double conjunctions are acceptable), with English grammar. Therefore, they tend to

think that double conjunctions are correct in English; this is an example of negative transfer.

This transfer might be due to an over-reliance on L1. Chan's (2004b, 2010) findings suggest that HK ESL learners think in Chinese before writing in English. This habit might facilitate negative transfer as there are syntactic and clause status differences between English and Chinese. Hence, if students directly translate a Chinese sentence into English in their mind, the Chinese sentence structure or vocabulary might be transferred, which is not necessarily correct in English.

Although most of the results from those two conjunction pairs (*although...but*, *because...so*) provide evidence that Chinese has an influence on learners' acquisition of conjunctions, there might be other reasons that lead to this error. One factor might be participants' English competency. From the findings, we discovered that the accuracy rate for the same structure with same conjunction pair, *although...but*, varied from sentence to sentence. The only difference between the two sentences is the content; therefore, it is possible that the difference in accuracy could be due to the students' English competency rather than transfer.

Furthermore, this observation establishes the need to test the same conjunctions multiple times. In fact, the inconsistency of the accuracy can only be uncovered through repetition of the test, allowing us to see the whole picture. Were this not done, we might overestimate the students' mastery of conjunctions.

### 7.1.2 Implicit Positive Transfer

According to Lado's (1957) Contrastive Analysis Hypothesis, L2 errors can be predicted based on the differences and similarities between learners' L1 and L2. However, the findings of this study are not fully in agreement with Lado's hypothesis. On the one hand, negative transfer was predicted and, indeed, observed in the use of double conjunctions and it is likely to be due to the differences between English and Chinese. On the other hand, errors for other conjunctions were not predictable and implicit positive transfer was not observed in other tested conjunctions.

The other conjunctions are *either...or*, *neither...nor*, *not only...but also*, and *despite*. These conjunctions can be put in different positions in a sentence, and some of these positions correspond with Chinese while others do not. Many conjunctions can be put at the beginning of the sentence in English but not in Chinese (Structure A). For example,

Structure A: 土耳其和烏克蘭都不是歐洲聯盟的成員。<sup>8</sup>

*Neither Turkey nor Ukraine is a member of the European Union.*

<sup>8</sup> Nothing is underlined in this phrase as "neither" (既不是) cannot be placed at the beginning of a Chinese sentence. A better translation of this Chinese sentence is "Turkey and Ukraine are not members of the European Union".

The above example is grammatically incorrect in Chinese but correct in English. However, a conjunction after the subject has been introduced is used in Structure B, which is correct in both English and Chinese. For instance,

Structure B: 她的生日既不是9月18日, 也不是9月19日。 Her birthday is *neither* the eighteenth *nor* the nineteenth of September.

These two types of sentence structure were presented in the task to test the existence of transfer. Based on the theory of Contrastive Analysis Hypothesis (Lado 1957), it should be expected that students would be less accurate for Structure A as it is different from their L1 structure. It would also be expected that they would be more accurate for Structure B as it has the same structure as Chinese, resulting in a positive transfer. Nevertheless, the findings from those conjunctions suggest the opposite to be true.

For the four conjunctions/conjunction pairs, *either...or*, *neither...nor*, *not only...but also*, and *despite*, students tend to be more accurate for Structure A than Structure B. This means that students performed better in the sentence structures that are different from their L1. Moreover, implicit positive transfer is not observed here. Therefore, from these findings, we can see that language errors cannot be predicted simply based on the differences and similarities between the two languages.

A possible reason for more accuracy with structures that are different from Chinese is that teacher may put more emphasis on them than on the similar structures. As explained in the previous literature (Cook 2016; Larsen-Freeman 1991), compared with negative transfer, positive transfer receives less attention, and it is hard to identify because of its invisibility. In contrast, because of the visibility of negative transfer, teachers and students might put more effort into teaching and learning structures which exist in the target language but not in the learners' L1. This might explain the finding that the accuracy rate for of Structure A was higher than that for Structure B.

From the first part of the GJT, we found the presence of implicit negative transfer in relation to the conjunction pairs: *although...but* and *because...so*. This suggests that Chinese is likely to have an influence on the acquisition of these conjunctions. However, implicit positive transfer is not observed in the four conjunctions/conjunction pairs: *either...or*, *neither...nor*, *not only...but also*, and *despite*, even when participants were presented with the sentence structures similar to those in Chinese. Therefore, it is worth noting that, although the differences between L1 and L2 might lead to negative transfer, not all language errors can be predicted simply by comparing the differences and similarities between the two languages.

## 7.2 Research Question 2: Does the use of L1 have an impact on this influence?

### 7.2.1 Explicit Transfer

In the second part of the GJT, we aimed to find out whether the use of L1 has an impact on the influence by presenting sentences in both Chinese and English to

learners, imitating teachers' use of L1 for translation in the classroom. The findings suggest that adding sentences in Chinese has an impact on students' accuracy in the use of conjunctions.

As described in our findings, implicit negative transfer is observed in the use of conjunctions *although...but* and *because...so*. This finding suggests that Chinese has an impact on HK ESL learners' acquisition of conjunctions. This suggestion is further indicated in the second part of the task. With the presence of Chinese in Part B of the task, students' accuracy rates decreased, which suggests that more students think the use of double conjunctions is grammatically correct in English. Hence, in the second part of the task, explicit transfer, transfer observed with the presence of Chinese translation, is observed. This further supports the idea that negative transfer is more likely to occur when Chinese is used in class.

Although implicit transfer is not observed in the first part of the task, for the other four conjunctions/conjunction pairs: *either...or*, *neither...nor*, *not only...but also*, and *despite*, some explicit transfer seems to be present after Chinese is added. By adding Chinese, the accuracy of participants in relation to structure B for those all four conjunctions increases, especially for the conjunction pairs *neither...nor* and *not only...but also*. This finding allows us to infer the existence of explicit positive transfer. Although not all the explicit transfer observed here is significant, this observation is supported by Larsen-Freeman and Long (1991) and Cook (2016), who suggest that, because of its invisibility, positive transfer might not be noticed easily or receive adequate attention. Therefore, even though the evidence is not conclusive, the signs of positive transfer in this data should not be disregarded.

From students' performance in the GJT, we can see that the presence of written Chinese has an impact on transfer, especially negative transfer. These findings demonstrate that the addition of Chinese is likely to worsen negative transfer and boost positive transfer. This supports the findings of Melby-Lervåg and Lervåg (2011) that bilingual instruction can increase the likelihood of transfer, both positive and negative. In fact, from the results, we can also see that, although Form 5 students have studied English for more than 10 years, the degree of negative transfer in this group is the most significant among the four Forms. Their accuracy decreased by more than half once L1 text was included in the task. One possible reason for this might be the high usage of Chinese in English lessons. As mentioned in the students' background (Sect. 5.2.), compared to other Forms, Chinese is used more frequently in Form 5's English class. Therefore, we can interpret that the amount and the frequency of the use of L1, might also be an important factor in evaluating the extent of the influence of Chinese.

## 8 Conclusion

From the six tested conjunctions/conjunction pairs: *although...but*, *because...so*, *either...or*, *neither...nor*, *not only...but also*, and *despite*, some signs of transfer were observed. The findings of this study clearly suggest that negative transfer might occur with or without the presence of Chinese in the task, as double conjunctions are allowed in Chinese grammar but not in English. Positive transfer might also occur when the sentence structures of some conjunctions/conjunction

pairs (*either...or*, *neither...nor*, *not only...but also*, and *despite*) are similar to those used in Chinese (Structure B).<sup>9</sup> However, students tend to have a better mastery of structures that are different from those of their L1. This suggests that implicit positive transfer might not occur even when the two languages share similar features. A possible reason for this phenomenon might be that both teachers and students put more emphasis on differing structures between the two languages because they think they are more difficult for learners.

Furthermore, this study shows that the presence of Chinese in the task can worsen negative transfer and boost positive transfer. Although the positive transfer observed is not significant, it should not be disregarded. The degree of transfer observed among students who received more Chinese instruction during the English class was higher than among those who received more English instruction. Therefore, it is reasonable to believe that the amount and the frequency of the use of Chinese L1 can be an important factor affecting the extent of Chinese influence. However, it is worth noting that differences between the two languages do not guarantee transfer, and this is not the only possible factor in explaining or predicting L2 language errors.

## 9 Limitations and Implications

One of the main limitations of our study is the limited sample size. Because of the geographical distance between the research site (HK) and where the researchers are based (the UK) and the limited accessibility to HK students, it was not possible to obtain a larger sample size for this study. Secondly, although students were given a self-assessment, we were not able to obtain the actual Chinese and English proficiency of the student participants due to time constraints. To address this limitation, it is recommended that future studies should adopt random sampling and design several different GJTs that suit the needs of students with different language proficiency levels. Thirdly, even though we attempted to recreate the bilingual reality in HK English classrooms by adding Chinese translation in the second part of the GJT, it is undeniable that this does not replicate the experience of being taught in a bilingual classroom. Due to the constraints mentioned and the pandemic, it was not possible for us to conduct classroom observations to obtain more in-depth data. Therefore, we were not able to measure the scale of frequency of languages used in English classrooms. Future studies should carry out classroom observations with two groups of participants: one group being taught in English only and another group taught in a mix of Chinese and English. This would enable researchers to measure the impact of the presence of Chinese in the learning environment more effectively. However, this study shows that transfer occurs when written Chinese is provided. This allows us to infer that transfer may also happen in the presence of spoken Chinese. In fact, this study provides a useful foundation for future researchers who would like to investigate the relationship between L1 use in classrooms and language transfer.

<sup>9</sup> Details of Structures A and B are discussed in Sect. 5.2. .

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## Declarations

**Conflict of Interest** There are no competing interests.

**Ethical Approval** This study was approved by the ethical review committee at the International Education Institute, University of St. Andrews. All participants read the information sheet of the study and signed the consent form, indicating their willingness to participate in this study. All participants gave consent to have their anonymised data published.

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