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Research Article

Transitions of Contrast in Chinese and English University Student Writing*

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Abstract

One of the fundamental ways in which knowledge develops is through contrast. This applies not only to the development of ideas and theories in argumentative texts, but also to the contrasting of new findings with old in experimental reports. Contrast, then, is central to the development of academic knowledge. A common finding in contrastive analyses is that the transition *however* is used significantly more by English than Chinese writers. This has been explained through suggestions that Chinese writers may be culturally less willing or linguistically less able to express contrast. Our objective was to identify which transitions of contrast are used more by Chinese students and to understand where and how they are used. In the closely matched Han CH-EN corpus of similar texts written by successful Chinese and English students at British universities, we identified four transitions that are used significantly more ($p < .05$) by Chinese writers: *while*, *whereas*, *on the other hand*, and *in contrast*. Through examining contexts of use and specific examples, we argue that Chinese students employ a greater variety of transitions than English students to achieve a similar amount of contrast in their writing. The paper concludes with seven implications for teaching academic writing in English.

Keywords

Metadiscourse • Transitions of contrast • Academic writing • English for academic purposes (EAP) • Chinese students • Corpus linguistics

* This paper includes findings from Chao Han's PhD project at Coventry University (UK), "The Use of English Transition Markers in Chinese and British University Student Writing" (2018). The paper and the thesis use the Han CH-EN corpus, which is a sub-corpus of the British Academic Written English (BAWE) corpus that was developed at the Universities of Warwick, Reading and Oxford Brookes under the directorship of Hilary Nesi and Sheena Gardner (formerly of the Centre for Applied Linguistics [previously called CELTE], Warwick), Paul Thompson (Department of Applied Linguistics, Reading) and Paul Wickens (Westminster Institute of Education, Oxford Brookes), with funding from the ESRC (RES- 000-23- 0800).

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Contrast is fundamental to the development of academic knowledge. It is important to build new knowledge in argumentative writing through highlighting differences in theories, ideas and opinions, and it is important in research and scientific writing to compare new findings with current knowledge. It is thus expected that all academic writing contains a substantial amount of contrasting information, but the extent to which these contrasts are made visible and explicit may well vary across different types of writing and across different educational cultures.

One of the linguistic means of indicating contrasts in academic writing is through transition markers, or transitions. In our study we follow Hyland's approach where transitions are "mainly conjunctions and adverbial phrases which help readers interpret pragmatic connections between steps in an argument." (2005, p. 50). These have been examined from different theoretical perspectives, including metadiscourse (Cao & Hu, 2014; Han & Gardner, 2017), linking adverbials (Biber, Johansson, Leech, Conrad, & Finegan, 1999; Chen, 2006; Gao, 2016; Lei, 2012; Liu, 2008; Peacock, 2010), logical connectives (Milton & Tsang, 1993), conjunctive cohesion (Field & Yip, 1992) and conjunctive ties (Gardezi & Nesi 2009). While each of these categories has a slightly different focus, and may include overlapping sets of linguistic items, they can all shed light on how notions of contrast are expressed in academic writing in English.

In this paper we aim to compare the use of transitions of contrast in a closely-matched corpus of successful writing by Chinese and British students in order to inform the teaching of academic writing. We first examine the use of contrast transitions quantitatively as a group, then investigate specific items more qualitatively through examples in context. The specific research questions are found at the end of the Methodology section, which follows a review of relevant literature.

Previous Research on Transitions of Contrast

Previous research can usefully be explored from two main perspectives: First, how transitions of contrast are used in different types of academic text; and secondly how they are used by different writers, with a focus on writing in English by first language (L1) Chinese and L1 English writers.

Register, Genre and Discipline

Contrast transitions are generally more frequent in written language than in spoken language. For example, Liu's (2008) study of spoken and written registers in the British National Corpus found that adversative linking adverbials in academic writing are about a third more frequent than in spoken English (3028 vs 2202 per million words). This finding is not repeated for each item, however. So, while *however*, which

is one of the most frequent contrast transition markers, occurred more than twelve times as frequently in academic writing than in speaking (1217 vs 89 per million words), the occurrence of *yet* in the two registers was the same (307 per million words). Despite this apparent similarity, it was found that in sentence initial position *yet* is substantially more frequent in academic writing (116 per million words) than in speaking (8 times per million words). A comprehensive analysis of transitions of contrast therefore should explore not only the set of contrast transitions as a group, but also the frequency and behavior of individual items.

Within academic writing, it is also important to differentiate texts by genre. For example, Hyland (2005) found that transitions occur more than twice as frequently in text books than in research articles (28.1 vs 12.3 per 1,000 words). It seems that the greater use in text books is to guide the reading process and clearly indicate to students the relationship between information or arguments in the text.

Other studies have examined contrast transitions in research articles and found differences across disciplines. Peacock (2010) first compared two disciplinary groups and found significantly fewer contrast transitions in the science disciplines of Chemistry, Computer Science, Materials Science and Neuroscience compared to the non-science disciplines of Economics, Language & Linguistics, Management and Psychology (2426 vs. 3172 per million words). In terms of individual disciplines, he found, for instance, that Chemistry used significantly fewer, while Neuroscience used significantly more contrast transitions. This could be explained by the predictable format of much writing in Chemistry, which focuses on reporting factual data within agreed theories, so explicit markers of contrast are not needed as much as they might be in a newer and more contested area of research, such as Neuroscience.

Similarly, Cao and Hu (2014), who compared across disciplines and across paradigms, found that comparative transitions were used significantly more in the discipline of Applied Linguistics than in Psychology, both in papers that adhered to a quantitative paradigm (3.16 vs 2.60 per 1,000 words) and in papers that adhered to a qualitative paradigm (2.73 vs 1.79 ptw). They explained the differences between the orientations of these disciplines in that, following Maton (2007), Applied Linguistics is more knower-oriented, while Psychology is more knowledge-oriented. One characteristic of knower-oriented disciplines is that they emphasize difference rather than similarity, which explains why significantly more contrast transitions occurred in Applied Linguistics to “emphasize the knower’s distinct voice, align or dis-align readers with alternative positions, and create knowledge claims in the knower code” (Cao & Hu, 2014, p. 28).

A more surprising finding from Cao and Hu’s study was that the quantitative papers use significantly more comparative transition markers than the qualitative papers in both disciplines. This appears to contradict earlier explanations where sciences

use fewer contrast transitions than non-sciences (Peacock, 2010). They explain this with reference to the frequent use of comparative transitions to highlight results that contrast expectations. “We expected This was not confirmed. *On the contrary*,” (2014, p. 22). These differences reinforce the importance of comparing like for like in terms of genre and discipline, as well as the importance of examining specific items in context.

Chinese and English Writers

The tradition of comparing student writing to published journal articles allows researchers to compare texts within broadly the same disciplines and identify potential areas for development in the student writing. The findings of two such studies that explore the writing of Chinese students in English are briefly reviewed here. Lei (2012) compared Chinese PhD students’ dissertations with journal articles in Applied Linguistics and found that student papers use substantially fewer adversative adverbials than published papers (2568 vs 3016 per million words). He suggests that adversative adverbials such as *however*, *despite this/that*, and *in/by contrast* may be difficult for Chinese writers to use. Chen (2006) compared writing across a range of Chinese MA TESOL student texts with Applied Linguistics journal articles and also found that the student writers used proportionally fewer adversative adverbials (21% vs 37% of all conjunctive adverbials). One difficulty with these studies relates to the lack of genre comparability. It may well be that the more concise journal articles use more contrast transitions simply because they are shorter, and more condensed. Studies that compare writing across the same genres could produce more definitive findings. This point was well made in Milton and Tsang’s (1993) study of undergraduate student writing, which is also critical of the way discourse connectors are taught using lists of connectors in each category, and short text extracts that make it difficult to really understand the role of these transitions over longer stretches of text. A further difficulty in comparing these studies is that the lists of items identified vary. For instance Milton and Tsang (1993) focused on *nevertheless* and *although*, and found they were both “overused” by their student writers, which ostensibly contradicts the more recent studies such as Lei (2012) and Chen (2006). Thus, in addition to the issues with lack of comparable genres, the methodologies used are different, as are the lists of items examined.

These studies indicate that there is more to be discovered about the role of contrast transitions in student writing, and that a study that compares like with like in terms of discipline, genre and level of study should help resolve inconsistencies in the findings reviewed above and also provide worthwhile insights for teaching.

Methodology

The Han CH-EN corpus was developed to compare “like with like” and focus on differences between L1 Chinese and L1 English student writers. The corpus was built by selecting from the British Academic Written English (BAWE) corpus of successful student writing from four English universities (Gardner & Nesi, 2013) those texts written by students who declared a variety of Chinese as their first language, and who were not educated in the UK prior to university. All the BAWE texts are “successful” in that they were submitted as part of regular university degree coursework, and received high marks (e.g. Merit and Distinction) from the subject lecturers. The texts by Chinese students not educated in Britain prior to university were then matched for discipline, genre family and level of study with texts by students who declared English as their first language and who were educated entirely in Britain. For example, a first year Economics Essay from a Chinese student would be matched with a first year Economics Essay by an English student. In some cases, an exact topic match was found when students answered the same question; in others, as close a topic match as possible was found. Inevitably, this resulted in an uneven spread in terms of disciplines and genre families, but it is one that reflects the most frequent assignments written by Chinese students at British universities. In order to avoid idiosyncratic use, it was decided to focus only on the top five disciplines and top five genre families when specifically investigating disciplinary and genre family use. These are shaded in Table 1.

Genre Families are groups of genres with a similar purpose and organisation. The five most populated genre families are Essays, such as expository and discussion essay genres, where students develop a personalized argument or thesis with the support of evidence from the discipline; Methodology Recounts, which include Lab Reports and similar reports of experimental activity; Critiques, which include book reviews, product evaluations and film reviews, are largely descriptive and evaluative; Case Studies, which are common in Business and in Medical Sciences and involve the analysis of a single exemplar with recommendations for future practice; and Explanations, which provide an account of how things work or are organized. These and the other genre families are described in detail in Nesi and Gardner (2012).

This resulted in the Han CH-EN corpus (Table 1), which consists of 156 assignments: 78 texts (170,227 words) by Chinese writers, and 78 texts (204,608 words) by English writers. This immediately shows that the English writers tended to write more than the Chinese for the same assignments. The corpus was loaded onto Sketch Engine (Kilgarriff et al., 2014) where items could be easily examined in context.

Table 1
 Number of Texts in the Han CH-EN Corpus Showing Distribution by Discipline and Genre Family

	Essay	Methodology Recount	Critique	Case Study	Explanation	Design Specification	Proposal	Literature Survey	Problem Question	TOTAL
Engineering	2	12	2	4	2	8	0	0	2	32
Food Sciences	2	22	0	0	0	0	0	2	0	26
Biology	0	10	2	0	6	0	2	0	0	20
Business	10	0	0	6	0	0	0	0	0	16
Law	10	0	2	0	0	0	0	0	0	12
Sociology	8	0	2	0	0	0	0	0	0	10
Hospitality, Tourism & Leisure Management	4	0	2	4	0	0	0	0	0	10
Linguistics	6	0	4	0	0	0	0	0	0	10
Economics	4	0	2	0	0	0	0	0	0	6
Politics	4	0	0	0	0	0	0	0	0	4
Agriculture	2	0	0	0	2	0	0	0	0	4
Publishing	0	0	0	0	0	0	2	0	0	2
Cybernetics/ Electronic Engineering	2	0	0	0	0	0	0	0	0	2
Psychology	0	0	2	0	0	0	0	0	0	2
Total	54	44	18	14	10	8	4	2	2	156

Transition markers were identified automatically based on a corpus query search for sentence initial items and items following a semi-colon. All instances of these items were then manually weeded through to ensure only those functioning as transition markers were retained. For example, *rather* and *however* can function as adverbial modifiers, as in “rather quickly” or “however quickly”, so such instances were excluded. Moreover transitions create internal relations in the discourse (Halliday & Hasan, 1976, p. 241), so items being used “externally”, as part of the propositional meaning of the text (e.g. temporal *while*) were excluded. This resulted in items from two main grammatical categories (conjunctions and adverbial phrases), with conjunctions (e.g. *but*, *while*) typically functioning syntactically to join two clauses, and adverbial phrases (e.g. *in contrast*) typically functioning syntactically to modify one clause. Both function pragmatically in the discourse to connect steps in an argument.

Significant differences were calculated using independent-samples *t*-test in SPSS. The standard *p*-value of less than 0.05 was used to determine statistically significant difference.

Hyland (2005) has three main categories of transition marker: Addition, Comparison and Consequence. Comparison marks arguments as either similar or different, and our focus is on those that mark difference, which we refer to here as transition markers of contrast, or contrast transitions.

The study reported here aims to first provide an overview of the occurrence of contrast transitions in the Han CH-EN corpus across disciplines and genre families,

and then to examine in more detail the use of those individual contrast transitions that emerge as being employed significantly more by Chinese writers.

Specifically, it aims to answer these questions:

1. Is there a difference in frequency of use of contrast transitions between Chinese and English student writers?
2. Are there differences within specific disciplines?
3. Are there differences within specific genre families?
4. Are there differences for specific contrast transition items?
5. Where differences are found, are there observable patterns of use in the discourse?
6. Where patterns can be observed, how might these be explained?

Findings

Variation in Contrast Transitions by Chinese and British Student Writers Overall and across Disciplines

The observed absolute frequency of contrast transitions in the Chinese and English components of the Han CH-EN corpus (Table 2) was similar (644 vs. 648), and there was also no significant difference in terms of relative frequency (3.58 vs. 3.27 per 1000 words) ($p > .05$).

Table 2
Frequency of Contrast Transitions in the Han CH-EN Corpus

	Chinese	English	<i>p</i> -value
Contrast Transitions (N)	644	648	
Mean (per 1000 words)	3.58	3.27	$p = .309$

The Han CH-EN corpus includes texts from thirteen disciplines and nine genre families, but some are more populated than others. In this and the subsequent section, therefore, in order to ensure meaningful comparisons across academic disciplines and genre families, disciplines and genre families with fewer than five pairs of texts are not counted. This results in a robust comparison across five disciplines and five genre families. These reflect courses where there are more Chinese students and genre families that are more popular for assignments in those courses.

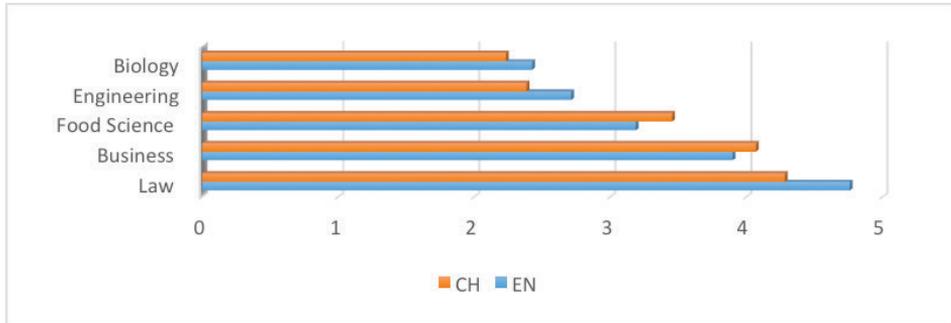


Figure 1. The use of contrast transitions by Chinese and English students across the five main disciplines.

As the bar lines in Figure 1 suggest, no statistically significant ($p > .05$) differences were found (Table 3) in the use of contrast transitions between the Chinese and English writers across disciplines.

Table 3

The Use of Contrast Transitions by Chinese and English Students across the Five Main Disciplines

Disciplines	Chinese	English	<i>p</i> -value
	Mean per 1000 words		
Law (LAW)	4.284	4.761	.701
Business (BUS)	4.071	3.899	.821
Food Science (FS)	3.455	3.188	.767
Engineering (ENG)	2.385	2.713	.556
Biology (BIO)	2.232	2.425	.710

An examination of the use of contrast transitions across the five main disciplines (see Table 3) demonstrates that Chinese and English student writers are both following similar patterns of disciplinary variation (Figure 1). It was found that the non-science disciplines of Law and Business contain higher frequencies of contrast transitions than the science disciplines of Food Science, Engineering, and Biology.

Variation in Contrast Transitions by Chinese and British Student Writers across Genre Families

The use of contrast transitions varies across the five main genre families of Explanation, Methodology Recount, Case Study, Essay and Critique (Figure 2), with no statistically significant differences found between Chinese and English writers (see Table 4). For both groups of students, the more discursive genre families of Essay and Critique use more contrast transitions than the more technical genres of Methodology Recount and Explanation.

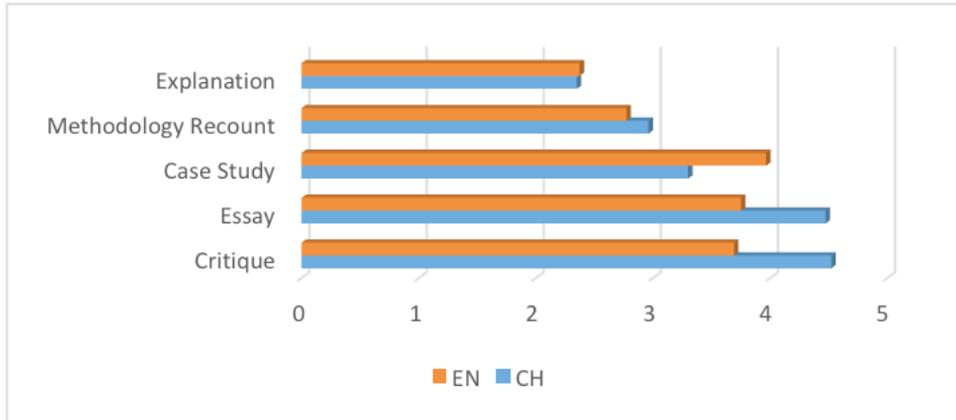


Figure 2. The use of contrast transitions by Chinese and English students across the five main genre families.

The discursive vs technical pattern breaks down for Case Studies, which at more than 3.5 pmw for the English writers are similar to the discursive genres and at less than 3.5 pmw for the Chinese writers are similar to the technical genres.

Table 4

The Use of Contrast Transitions by Chinese and English Students across the Five Main Genre Families

Genre Families	CHinese	ENglish	<i>p</i> -value
	Mean per 1000 words		
Critique (CR)	4.522	3.690	.435
Essay (ES)	4.473	3.751	.147
Case Study (CS)	3.299	3.964	.394
Methodology Recount (MR)	2.961	2.773	.763
Explanation (EX)	2.349	2.373	.831

No statistically significant ($p > .05$) differences were found (Table 4) in the use of contrast transitions between the Chinese and English writers across genre families.

Variation in Contrast Transitions by Chinese and British Student Writers for Specific Contrast Items

14 different contrast transitions were identified in the Han CH-EN corpus (Table 5). The three most frequent items, *however*, *but* and *while*, account for more than 80% of contrast transitions in the entire Han CH-EN corpus.

Table 5
Frequency of 14 Contrast Transitions

Contrast transitions	CH		EN		p-value
	AbsFreq	per 1000	AbsFreq	per 1000	
however	244	1.440	364	1.911*	0.047
but	188	0.937	189	0.907	0.873
while	99	0.553*	27	0.130	0.000
on the other hand	38	0.206*	9	0.037	0.000
whereas	26	0.189*	14	0.069	0.024
in contrast	11	0.070*	3	0.012	0.025
on the contrary	10	0.043	2	0.017	0.311
rather	8	0.028	7	0.034	0.737
meanwhile	6	0.045	0	0.000	0.100
at the same time	5	0.028	3	0.008	0.298
conversely	4	0.022	6	0.035	0.490
by contrast	3	0.012	1	0.007	0.684
alternatively	2	0.010	6	0.029	0.360
whilst	0	0.000	17	0.075*	0.001
Total	644	3.583	648	3.271	0.309

* indicates a significantly greater value ($p < .05$).

Although no significant differences were observed between Chinese and English writers across the five main disciplines, the five main genre families or the entire set of transitions in the Han CH-EN corpus, Table 5 shows where there are significant differences for individual contrast items. Two items are used more by English writers (*however; whilst*), one frequent item (*but*) is used to a similar extent, and four items are used more by Chinese writers (*while, on the other hand, whereas, in contrast*). As the number of contrast transitions as whole is similar (Table 2), Table 5 shows that Chinese writers are using a greater variety of transitions, where English students rely more on *however*. It is therefore not true to suggest that Chinese students are less culturally willing to express contrast relationships, and it may be that their use of a greater variety of transitions is effective.

Individual Transitions Favored by Chinese Writers

The detailed analysis here will focus on the four items used more by Chinese writers, *while, whereas, on the other hand* and *in contrast*. The aim is to understand how each item is typically used and to explore other uses and related transitions particularly, but not exclusively, in the Chinese writing.

While

While has three main senses: temporal, contrast and concession (Lea et al., 2014, p. 900), but our focus here is on contrast, as in these examples:

- (1) To conclude, we can say that Britain succeeded in making the transition into “modern economic growth” *while* the Dutch did not. (CHIESECO-0071a)³

3 In these codes, the first two letters indicate CHinese or ENGLISH, the number indicates level of study, the next two letters indicate genre family (see Table 1), the next two or three letters indicate discipline (see Table 1), the next four numbers identify the student and the final letter identifies the student’s text.

- (2) It is interesting that the control sample was also translucent *while* the unpasteurized control sample was still cloudy. (EN2MRFS-6004d)

In (1), the Chinese first-year Economics student uses *while* to reinforce the contrast between Britain succeeding and the Dutch not. In (2), the English second-year Food Sciences student uses *while* to reinforce the contrast between the translucent sample and the cloudy sample. Both these are typical contrastive uses of *while*.

Less conventional uses are also found, as in (3).

- (3) In commodity-capitalist society, exchange-process seems to be dominant, *while* in fact, production plays a more decisive role in determining the magnitude of value. (CH4ESSOC-0319a)

There is clearly a contrast being made that the writer wants to highlight, but as Swan explains, *while* is typically used to “balance two facts or ideas that contrast, but do not contradict each other”, while the contrast *but* is used to counter an argument (2005, pp.157-158). In the Sociology Essay (3), the Chinese writer presents a counter argument, so *but* would be more appropriate. Evidence from collocation in the Written Books and Periodicals section of the British National Corpus (BNC) is also persuasive in that *but in fact* occurs 298 times compared to *while in fact* which occurs only eight times.

In terms of syntax, *while* typically introduces a second main clause in a sentence, and follows a comma, as in the Sociology example (3) above. In approximately a third of the Chinese instances, and half of the English instances the comma before *while* is omitted, as in the Economics and Food Sciences examples (1) and (2) above. Occasionally in the Chinese writing the comma is replaced by a semi-colon, which may not be strictly “correct” according to a recent corpus-informed reference work for academic English (Lea et al., 2014, p. 25) which states that semi-colons should be used between two main clauses not joined by a conjunction (such as *while*). Nevertheless, using *while* to join clauses that balance facts even without a comma as in (1) and (2) is preferable to its rare appearance as a sentence adverbial attached to a single clause, as in this Politics Essay (4):

- (4) The former emphasizes the importance of the state intervention in economic development. *While* the latter claims that the less state intervention can make the national economy more competitive. (CH4ESPOL-0257d)

It is worth briefly mentioning *whilst* here as it basically has the same meaning as *while* and although its use is in decline, as a search over the decades in historical corpora such as COHA or google books confirms (*see* Appendix 1), it is the fourth most frequent contrast transition used by English students (*see* Table 5), as in this Economics example (5):

- (5) The results of the simply supported beam are displayed in Table 1, *whilst* the cantilevered beam results are displayed in Tables 2 and 3. (EN1MRENG-0249h)

Even when larger corpora have been consulted, no semantic or syntactic patterns have emerged that could explain the choice between *while* and *whilst*. If we count *while* and *whilst* together, and remove those Chinese examples which are infelicitous, we are still left with a preference for *while* in Chinese vs English student writing.

Whereas

Whereas is another frequent transition marker. In the Han CH-EN corpus it is typically used to join two clauses and “to compare or contrast two facts” (Lea et al., 2014, p. 900), as in (6) and (7):

- (6) The competence motive assumes that people have faith in their own ability to influence the surrounding environment, *whereas* the achievement motive assumes that individuals are devoted to maximizing abilities and achieving set goals. (CH1ESBUS-0271c)
- (7) Content theories are context free and assume the situation has little impact, *whereas* process theories assume that personalities have little impact and that people are able to make a logical assessment of likely outcome probabilities when making decisions. (EN4CSBUS-0289b)

In such cases, *whereas* could easily be replaced by the contrastive *while* (Huddleston & Pullman 2002, p. 737).

Whereas usually occurs at the beginning of the second clause in a sentence, as in (6) and (7), but it can also occur at the beginning of the first clause, where it performs the same subordinating function, as in these two examples (8 and 9) from Law Essays:

- (8) *Whereas* the English abortion debate has been dominated by the question of whether or not abortion should ever be justified in law, the more difficult moral questions arise in distinguishing circumstances in which abortion should not be permitted from those in which it should. (CH3ESLAW-0410d)
- (9) *Whereas* the decision in Broadway Cottages assumed that the application of the maxim “equity is equality” would result in equal distribution throughout the beneficial class, Wilberforce LJ turned to the settlor’s intentions for guidance: “[e]qual division is surely the last thing the settlor ever intended: equal division among all may, probably would, produce a result beneficial to none”. (EN3ESLAW-0397b)

While *whereas* is relatively interchangeable with *while* as a subordinating conjunction, it is also found functioning as an adverbial in the Chinese writing (10 and 11):

- (10) One implication of HRT having for organisation of work is that workers have social needs and managers ought to be aware of and respond to it. *Whereas*, to what extent

their needs affect organisation productivity and how to deal with informal social power are not explicitly mentioned by Mayo. (CH4ESBUS-0124a)

- (11) To be more precise, there is no ambiguity in single words or the surface structure; *whereas*, the semantic scope is indefinite due to other elements, for instance, qualification and negation. (CH4ESLIN-6058e)

Here it is not only syntactically problematic, but also semantically. *Whereas* typically introduces a counter-argument, rather than balancing two facts or ideas (Swan, 2005, pp. 157–158). In these semantic contexts, *however* or *but* would probably be a better choice.

A different problem is seen in (12), where *whereas* follows a semi-colon and, as discussed above for *while*, a conjunction is not needed with a semi-colon.

- (12) Substitutive compensation may refer to the money substitute for value required to perfect a failed duty a trustee promised to deliver; *whereas* reparative compensation may refer to the money required to make good losses occasioned by a trustee's breach of trust, including a trustee's imprudent investment. (CH3ESLAW-0410a)

The writing could be improved either by replacing the semi-colon with a comma, or by introducing a sentence adverbial such as *however* or *in contrast*.

Our examination of *while*, *whilst*, and *whereas* has shown that these three are all subordinating conjunctions. The greater use by Chinese writers can be partially explained by syntactic errors when these conjunctions are used as if they were sentence adverbials, but their appropriate use is noteworthy and supports the hypothesis that Chinese writers are effectively using a greater variety of contrast transitions. It has also shown that the three are relatively interchangeable semantically (when they are being used contrastively). We now turn to the sentence adverbials that are used more by Chinese writers.

On the Other Hand

On the other hand in its contrastive sense is used four times more often by Chinese writers than English writers (Table 5). In (13) and (14), it is used appropriately to contrast two notions.

- (13) *On the other hand*, the other group of people usually works with poor service quality. (CH1ESHLT-3018d)
- (14) Tesco and Asda, *on the other hand*, have a smaller range which allows them to have more of those particular products and therefore rarely go out of stock. (EN1ESAG-6021c)

In (13), one group of previously mentioned people is contrasted with another group introduced here. In (14), Tesco and Asda are contrasted with Sainsbury's, a previously

mentioned supermarket. In the majority (82.6%) of Chinese instances, however, *on the other hand* was not used in this way. It was used to add to an argument, as in (15):

- (15) *On the other hand*, Herzberg and Abraham Maslow proposed two content theories based on McGregor's Theory Y. (CH1ESBUS-0271c)

This example (15) is a very typical use of *on the other hand* in Chinese students' texts. Here *on the other hand* occurs in the initial position of a paragraph, where this paragraph is the first one in a section entitled "ii. MCGREGOR'S THEORY Y". The previous section is entitled "i. MCGREGOR'S THEORY X". This means that *on the other hand* in the initial position of this section is used to introduce Theory Y, following Theory X in the previous section. Thus, *on the other hand* does not play the role of indicating a contrastive relation, but it is used to add an argument in a text.

This use of the item *on the other hand* by Chinese students to add an argument is explicitly shown with words like *also*, and *and* in a sentence. For example,

- (16) In addition, under the British Colonialism, several large international enterprise such as HSBC, Jardine Matheson, and Swire group were well-developed before 1950. *And on the other hand*, the large foreign enterprises did not take away the capital from HK to their country. (CH4ESPOL-0257e)
- (17) *On the other hand*, it could *also* deduce that the potential growth of IHG is experiencing saturation (Koch, 2000). (CH3CRHLTm-3018e)

In (16) and (17), *on the other hand* is not only superfluous as the relationship between the sentences is already indicated by *also* and *and*, but it is rather misleading, as readers are looking for a contrast and trying to find such meaning in the text. This use of *on the other hand* to add an argument occurs nine times in five texts from three Chinese students, which provides some explanation for the greater use of *on the other hand* in Chinese writing, but not the full picture.

A similar collocation is found with *firstly*. Here too, *on the other hand* is used to add an argument. That an argument is being added is further highlighted by the *also* in the second sentence:

- (18) *Firstly*, as dividends and tax liabilities are cash transactions, there are risks that IHG would be incapable to pay the proposed dividends to shareholders. *On the other hand*, it also implies that there would be financial problems for IHG to repay the amounts owing in the short term to their suppliers. (CH3CRHLTm-3018e)

Another noteworthy collocation for *on the other hand* might be *on the one hand*, as in (19) where the second *hand* is elided:

- (19) There is a dual nature of surplus value in the financial services, therefore, where, *on the one hand* they add no surplus value to money capital but *on the other*, "the capitalist services they themselves provide do create new surplus value". (EN4ESBUS-0073d)

Surprisingly, perhaps, this is the only example of *on the one hand* in the corpus. Instead, in the Chinese writing, we find *on one hand*. For example,

- (20) *On one hand* the court had limited the possibilities for tax avoidance, by restricting its jurisdiction to sanction variation of the trust instrument, while *on the other* ensuring that settlements created for tax avoidance purposes were allowed to stand on the basis of a lower threshold for certainty. (EN3ESLAW-0397b)
- (21) The system *on one hand* prevents the domination of the majority party in the Legco, *on the other hand* it curtails the power of the Legco members to propose private members' bill (Ma 2001). (CH4ESSOC-0350a)

We shall consider first the meaning, then the form. While the English example from Law (20) is one of four instances used with contrastive meaning, the Chinese example from Sociology (21) does not highlight a meaningful contrast. The two clauses are making a similar point (how the system prevents the domination or curtails the power of Legco) and so an additive transition might be more appropriate. Further investigation suggests that none of the seven Chinese uses of *on one hand* really highlight contrastive meaning.

Chinese writing thus favors pairs of adverbials such as *on one hand* and *on the other hand*. This pattern is used in Chinese, where the equivalent of *on one hand* and *on the other hand* is “一方面 (yī fāng miàn)” and “另一方面 (lìng yī fāng miàn)”. A similar pair, found only in the Chinese writing, is *on one side* and *on the other side* which is an alternative English translation of the Chinese 一方面 (yī fāng miàn) and 另一方面 (lìng yī fāng miàn).

- (22) *On one side*, investment in joint ventures had a 20.5 per cent rise which had the most important effect on the total fixed asset investments. While, *on the other side*, investment in own shares had a 37.5 per cent fall which had a strong negative effect on total investment. (CH4CRENG-0223d)

In (22), the Chinese writer used *on one side* and *on the other side* to show the contrast between the rise of a 20.5 per cent and the fall of a 37.5 per cent of two types of investment. This ease of transfer from Chinese may partly explain the Chinese student preference for these transition markers. Whether they also relate to concepts of balance, of yin and yang, is of course also possible.

A search for *on one side*, and *on one hand* in BAWE and the BNC shows that *on one side* is rare, while *on one hand* occurs regularly, though less than *on the other hand*. A notable feature of the English student writing that is absent in the Chinese student writing is the collocation of *on the other hand* with other contrast items like *but*, *while* and *however*. For example,

- (23) There is a dual nature of surplus value in the financial services, therefore, where, on the one hand they add no surplus value to money capital *but on the other*, “the capitalist services they themselves provide do create new surplus value”. (EN4ESBUS-0073d)
- (24) On one hand the court had limited the possibilities for tax avoidance, by restricting its jurisdiction to sanction variation of the trust instrument, *while on the other* ensuring that settlements created for tax avoidance purposes were allowed to stand on the basis of a lower threshold for certainty. (EN3ESLAW-0397b)
- (25) *On the other hand, however*, Elson (1979) and Dobb (1971) play down the exploitation interpretation and Dobb (1973) interprets the labor theory of value as “an explanation of equilibrium ... prices in a capitalist economy” (Elson 1979). (EN4ESBUS-0073d)

In all three examples (23-25), the transitions have a contrastive function. The combination of *but/while/however* with the contrast *on the other hand* serves to emphasize the contrastive relationship between the two clauses. As a corpus search (Figure 3 and Table 6) shows, these collocations are well established in student (BAWE) and professional (BNC) writing.

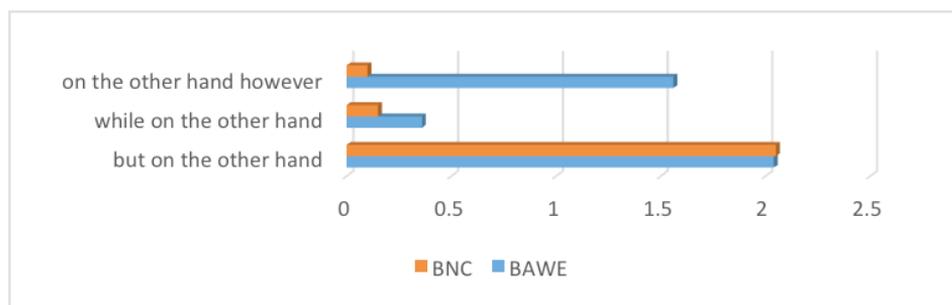


Figure 3. Three collocations with “on the other hand” in BAWE and BNC.

It is noteworthy that the frequency of *but on the other hand* is equally frequent in BAWE and BNC, while the frequency of *while on the other hand* and *on the other hand however* are much more frequent in the student writing in BAWE than in the books and periodicals section of the BNC. The reasons for this are not clear.

Table 6

Three Collocations with “on the other hand” in BAWE and BNC

	BAWE (pmw)	BNC (pmw)
but on the other hand	2.04	2.05
while on the other hand	0.36	0.15
on the other hand however	1.56	0.10

pmw = per million words

One final area of difference relates to sentence position. Chinese students tend to use *on the other hand* more in sentence initial position than their English counterparts (61% vs. 7%), as in examples (13), (15) and (25). It also occurs exclusively in Chinese (i.e., not in English), writing clause initially following a semi-colon, as in (26).

- (26) A theory that is derived from a problem can determine the method; *on the other hand*, the data that is generated from certain methods can modify the theory or the problem in return. (CH4ESSOC-0350c)

English students tend to use *on the other hand* more in non-sentence initial positions (93% vs. 39%), typically between the subject and the verb as in (27) and (28):

- (27) The data connection, *on the other hand*, needs more complex rules due to the variety of data types transferred. (EN4DSENG-0146c)
- (28) Social needs, *on the other hand*, include the need for affiliation, because social needs refer to the “need for satisfactory and supportive relationships with others” (Fincham & Rhodes 2005:195). (CH1ESBUS-0271c)

This pattern has been seen in other studies of sentence adverbials, for instance of *however* (Han & Gardner, 2017), and might also be expected for *in contrast*.

In Contrast

The fourth and final transition marker that occurs statistically more often in Chinese writing in the Han CH-EN corpus is the sentence adverbial *in contrast* (Table 5). The numbers here are relatively small (11 Chinese vs 3 English instances). But if these are taken together with other adverbials such as *on the contrary* (10 vs 2) and *by contrast* (3 vs 1), a pattern emerges that warrants investigation.

As we might now expect, *in contrast* is widely used in sentence-initial position and emphasizes the contrast in meaning between the sentence before and the sentence it introduces:

- (29) Content theories assume that all people have the same set of needs, and that these needs motivate behavior (Fincham & Rhodes 2005:193) *In contrast*, process theories assume that all humans have different needs, and focus on how cognitive processes, or “the way we take in and process information about ourselves and the world,” (Fincham & Rhodes 2005:193) influences these needs. (CH1ESBUS-0271c)

In (29), “content theories” are contrasted with “process theories” where the former assume all people have “the same” needs and the latter that they have “different” needs.

Surprisingly perhaps, only one non-sentence initial *in contrast* was identified. It occurs between two clauses in a sentence, following a semicolon:

- (30) The degree of foreign accent of the students highly correlated with AOL but not the LOR factor; *in contrast*, TOEFL results corresponded with LOR of those students but not the age reason. (CH4ESLIN-6058a)

As in other examples of semi-colon use, (30) is from a Chinese student. Thus although the data set here is very small, the same patterns are visible. A search for *in*

contrast in a clause medial position in the BAWE corpus reveals that it also occurs in English writing between the subject and verb.

Like *in contrast*, *by contrast* typically occurs in sentence initial position with a contrastive sense in both Chinese and English writing. In (31), the student uses *by contrast* to introduce De Haan's model which contrasts with Palmer's model.

- (31) As mentioned earlier in relation to Epistemic modality, Palmer's model is important because of its attempt to achieve cross-lingual adequacy, but simultaneously illustrates the tendency for semantically ambiguous and confusing terms to proliferate in this field of linguistics. *By contrast*, De Haan's (1997) endeavours to develop a model of the relationship between modality and negation across languages, results in the narrow selection of specific modals forms and necessary exclusion of many of the instances of modality discussed here. (EN4ESLIN-6038a)

By contrast was also found following *however*, as in (32):

- (32) Academics and researchers proposed different views about this issue, Bradfield and Crockett (1995) concluded that there is little evidence to suggest that employees' attitudes bear any simple or appreciable relationship to performance on the job. However, *by contrast*, Herzberg et al (1957) provided a quite different conclusion: there is frequent evidence to suggest that positive job attitudes are favourable to increased productivity. (CH4ESBUS-0264a)

While this seems to follow the pattern established for *on the other hand* with *however* (Figure 3), it is noteworthy that this combination of *however* and *by contrast* does not occur elsewhere in BAWE, nor in the BNC (text type: written books and periodicals). It might therefore be considered innovative or idiosyncratic. It is used appropriately from the grammatical and semantic perspectives that we have used to examine the other transitions, but it is distinctive in its uniqueness.

Although there was not a significant difference in the use of *on the contrary* between Chinese and English writers, its pattern of occurrence (Table 5), meaning and use are very similar to *in contrast* and therefore it is included here. The meaning of *on the contrary* involves a contradiction, which goes beyond a contrast. It "introduce[s] a statement that says the opposite of the last one" (Lea et al., 2014, p. 170). Moreover, "you use *on the contrary* when you have just said or implied that something is not true and are going to say the opposite is true" (Sinclair, 2001, p. 328). Strikingly, this is not how *on the contrary* is used by either Chinese or English writers in the Han CH-EN corpus, as in (33).

- (33) Although there was an obvious drop from 2000 to 2001, the debtor collection days were still above 70 days. *On the contrary*, the creditor payment days were constantly below 30 days, and the shortest payment days occurred in 2002 which was only 16.9 days. (CH4CRENG-0223d)

Here the text is descriptive, and the contrast is between two sets of facts. These are relatively independent facts that do not contradict each other so *on the contrary* could be replaced with *by/in contrast*. The value of such examples is that they help us to clarify distinctions in the use of such contrastive transitions.

The greater use of sentence adverbials by Chinese writers examined in this section suggests that there are more inappropriate and unique uses of the sentence adverbials *on the other hand*, *in/by contrast*, and *on the contrary* than was the case for the conjunctions *while* and *whereas*.

Discussion and Conclusions

The development of the Han CH-EN corpus has provided a closely-matched set of texts in that all texts are successful British university assignments, and each text by a Chinese student writer is matched for genre family, discipline and level of study with one by an English student. In response to the first research question, it was discovered that Chinese and British writers express transitions of contrast to a similar extent (Table 2). This is an important point, and contrary to suggestions from the literature that Chinese students might be culturally reluctant to make contrastive claims explicitly.

Further support for a similar approach to the use of contrast transitions emerges in response to questions two and three, where no significant differences were found between Chinese and English writers in terms of the use of contrast transitions within specific disciplines (Figure 1) or within specific genre families (Figure 2). Both groups used more contrast transitions in non-science disciplines (Law and Business) than in the sciences (Food Science, Biology, and Engineering). One explanation for this is that non-sciences tend to embrace competing theories more than sciences, which are generally more consensual. Our finding is consistent with earlier studies of research articles that found fewer contrast transitions in sciences (Peacock, 2010), particularly those where there is greater consensus (Cao & Hu, 2014).

Both Chinese and English students used more contrast transitions in the discursive Critiques and Essays than in the more quantitative Methodology Recounts and Explanations. This could be explained by the greater use of Essays in non-sciences, and of Methodology Recounts in sciences. Interestingly, however, this is not consistent with Cao and Hu's (2014) finding of greater use of contrast transitions in quantitative papers (which would be more like Methodology Recounts) than in qualitative papers (which would be more like Essays). Further research might be able to explain whether the contradictory nature of these findings is due to differences in genre (assessed student writing vs published journal articles) and/ or the disciplines involved in the data for each study.

It was only when we turned to comparing the use of individual transitions that statistically significant differences in use emerged. As with earlier studies, we also found that *however* was used significantly more by English students, and we have explored this in depth elsewhere (Han & Gardner, 2017). This paper focuses on the important finding that there are four items which Chinese students use significantly more than English students: *while*, *whereas*, *on the other hand*, *in contrast*. In relation to these, we also considered *whilst*, *on one hand*, *on the other*, *by contrast*, and *on the contrary*. This means that Chinese students use a greater variety of transitions than English students to achieve a similar amount of contrast in their writing.

In examination of the specific items, it emerged that Chinese students make effective use of the conjunctive contrast transitions *while* and *whereas*, but are more prone to infelicitous use with the sentence adverbials *on the other hand* and *in contrast*. This provides a context for interpreting Lei's (2012) and Chen's (2006) research. Their findings suggest that Chinese students could use contrastive items like *by/in contrast* more frequently, to bring them up to the levels used in published research. Our finding that successful Chinese students already use these items more than English students means that frequency is not the main issue. The focus should shift to better understanding of appropriate contexts of use, particularly for such sentence adverbials. This could be addressed by complementing corpus and discourse analyses with interviews (see Bogdanović & Mirović, 2018).

The following implications for teaching follow from the findings of this paper:

1. *However* is used more frequently by successful English students, so Chinese students should not feel pressured to avoid *however* to use a greater variety of transitions, and should not be picking different transitions simply from a list – they are not all interchangeable syntactically or semantically.
2. The distinction between conjunctions (*while*, *whereas*) and sentence adverbials (*in contrast*, *on the other hand*) is worth teaching as it has a number of pedagogical implications. The first is that students should not attempt to use conjunctions as adverbials, or vice versa. Conjunctions are used to join two clauses syntactically; adverbials are used to comment on the propositions in a clause.
3. While conjunctions are used clause initially, sentence adverbials can move and it is helpful to consider what is being contrasted when deciding whether adverbials should occur clause initially or after the subject. If the subject is given information, it can be more effective to put the contrasting adverbial between the subject and the verb. Such instruction is best conducted in the context of extended text, of at least several paragraphs, so that the arguments

- and given/new information is clear.
4. Conjunctions can be combined with sentence adverbials (*but in fact*), where two consecutive sentence adverbials is unusual (*however; by contrast*). Examples of effective combinations from the corpus include *but on the other hand; but rather; however; at the same time; and and conversely*.
 5. Semi-colon use was rare, and varied. This would not be a teaching priority.
 6. The semantic distinctions between a notion of balancing contrast (*while/ whereas*), countering an argument (*however*), and contradicting an argument (*on the contrary*) emerged as essential to enabling appropriate use of specific contrast transitions.
 7. Activities based on the extracts in this paper could help students understand these syntactic and semantic distinctions and associate them with appropriate contrast transitions.

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