

# Attitudinal evaluations in two versions of research articles: A cross-linguistic exploration of their pattern shifts

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## Abstract

Attitudinal evaluations have long been of interest to researchers of academic discourse. Yet, much research on the linguistic phenomena has been carried out with reference to first or second language users' English academic writings. Cross-linguistic studies are seldom undertaken in relation to the patterns in which the evaluative attitudes couple or, alternatively, combine semantically with the evaluated targets, and their variations in different academic languages. Designed as mixed-methods research, this study investigates attitudinal evaluations in a collection of research articles (RA) published in both Chinese and English versions through translation, exploring how the evaluative coupling patterns shift cross-linguistically in terms of the systemic functional ideas of attitudinal evaluation and coupling. Findings show that while some cross-linguistic coupling pattern shifts normally occur with the evaluated targets remaining unchanged, some others usually appear with concomitant target change. Importantly, the study reveals that some coupling pattern shifts stand out by displaying delicacy variations between lexical and grammatical means in representing evaluative meaning. It was argued that the study adds to the picture of different approaches to evaluative language and cross-linguistic rhetorical variation, and offers a heuristic for the research and pedagogy in the domain of languages for specific purposes (LSP).

**Keywords:** Attitudinal evaluations, coupling patterns, cross-linguistic shifts, parallel corpus, research articles.

## Resumen

### *Evaluaciones actitudinales en dos versiones de artículos de investigación: Una exploración interlingüística de sus cambios de patrón*

Las evaluaciones actitudinales han sido durante mucho tiempo un tema de interés para los investigadores del discurso académico. Sin embargo, gran parte de la investigación sobre estos fenómenos lingüísticos se ha realizado con referencia a escritos académicos en inglés de usuarios de primera o segunda lengua. Los estudios interlingüísticos rara vez se realizan en relación con los patrones en los que las actitudes evaluativas se acoplan o se combinan semánticamente con los objetivos evaluados y sus variaciones en diferentes lenguas académicas. Este estudio, diseñado como una investigación de métodos mixtos, analiza las evaluaciones actitudinales en una colección de artículos de investigación publicados tanto en versiones en chino como en inglés a través de la traducción, explorando cómo los patrones de acoplamiento evaluativo cambian interlingüísticamente en cuanto a la concepción sistémico-funcional de la evaluación actitudinal y el acoplamiento. Los resultados muestran que, si bien algunos cambios interlingüísticos en los patrones de acoplamiento suelen ocurrir manteniendo inalterados los objetivos evaluados, otros cambios generalmente se presentan con una modificación concomitante en los objetivos. Es importante destacar que el estudio revela que algunos cambios en los patrones de acoplamiento sobresalen al mostrar variaciones en la delicadeza entre los recursos léxicos y gramaticales para representar el significado evaluativo. Se argumenta que este estudio contribuye a la comprensión de diferentes enfoques del lenguaje evaluativo y la variación retórica interlingüística y ofrece una herramienta heurística para la investigación y la pedagogía en el ámbito de las lenguas para fines específicos.

**Palabras clave:** Evaluaciones actitudinales, patrones de acoplamiento, cambios interlingüísticos, corpus paralelo, artículos de investigación.

## 1. Introduction

As crucial interpersonal linguistic tactics communicating or construing language users' emotions and opinions on entities, events or propositions (Hunston & Thompson, 2000; Mauranen & Bondi, 2003; Hyland & Sánchez Guinda, 2012; Xie, 2020), attitudinal evaluations have long been of interest to functionally oriented discourse analytical studies. Looked at from the perspective of research paradigms, the studies can be characterized as being mostly informed or inspired by two analytical frameworks. One is Hyland's (2005) metadiscourse framework, which approaches attitudinal evaluations

as being principally encoded by the interactional metadiscourse of attitude markers; the other is Martin and White's (2005) discourse-semantic appraisal framework, which affords a more delicate but systemic portrayal of attitudinal evaluations in terms of affect, appreciation and judgment. Additionally, attitudinal language use has also received much attention of researchers subsuming it under the broad cover terms of stance, voice and evaluation (see e.g., Hunston & Thompson, 2000; Biber, 2006; Hyland & Sánchez Guinda, 2012; Hyland & Jiang, 2018).

The above situation is typically noticeable in the research on written academic discourse, which either deals exclusively with English academic writings or involves cross-linguistic contrastive analysis of academic writings produced in English and one or more languages other than English. Studies in the former case are particularly successful in discussing attitudinal meanings with respect to their prosodic patterns and functional shifts across phases of research article introductions (e.g., Hood, 2006, 2010), and in revealing how attitudinal language use in English writings may vary in terms of cultural dispositions (e.g., Abdollahzadeh, 2011; Liu & McCabe, 2018), generic propensities (e.g., Coffin, 2006; Kawase, 2015), or disciplinary preferences (e.g., Hu & Cao, 2015; Szenes & Tilakaratna, 2021).

Apart from the studies tackling monolingual data of English academic writings, recent decades have also witnessed an increase in the number of studies concerned with attitudinal evaluations that are interlingually and thus interculturally contrastive in nature. With English being the international academic lingua franca, these cross-linguistic studies are predominantly undertaken through corpus-based contrastive analysis of English and non-English academic discourse. For example, studies have explored convergences and divergences between English academic writings and their counterparts produced in languages such as Chinese (e.g., Kim & Lim, 2013; Mu et al., 2015), Spanish (e.g., Mur Dueñas, 2011; Lee & Casal, 2014), Persian (e.g., Salar & Ghonsooly, 2016; Ariannejad et al., 2019), and Malay (e.g., Loi et al., 2016). Similar to some studies in the prior group, these studies give more or less prominence to the genre-specific, discipline-specific, and most importantly language-or-culture-specific traits manifested by or affecting the distribution and configuration of attitudinally evaluative lexicogrammatical resources in specialized academic discourse.

Despite the prolificity of attitude-related discourse analytical studies, they have drawn attention to attitudinal or evaluative resources, leaving

insufficient account of the targets of evaluation (Bednarek, 2009; Su & Hunston, 2019). The result is that few examples, with the exception of Szenes (2021), looked into the patterns in which attitudinally evaluative resources may couple or, alternatively, combine semantically with the evaluated targets, let alone possible cross-linguistic shifts in the patterns of coupling. Moreover, inadequate attention to comparable data of analytical equivalents, compounded by the predominance of English for specific or academic purposes in LSP research, may also be part of the reason for the scarce investigation of cross-linguistic coupling pattern shifts.

However, to non-native LSP learners and practitioners, full command of attitudinal evaluations is only guaranteed through adequate knowledge of their coupling potentials and possible cross-linguistic variations. In addition, although comparable corpora tend to be favored in previous studies, it should be noted that parallel corpora of translation equivalence and contrastive correspondence are also indispensable and helpful for revealing the functional features and semantic subtleties of specific linguistic resources (Mauranen, 1999; Johansson, 2007).

With this in mind, this study ventured into a parallel corpus of RA published simultaneously in both Chinese and English, exploring the expression of attitudinal evaluations with a central interest in their cross-linguistic shifts in their coupling patterns. Here, a cross-linguistic coupling pattern shift can be recognized as manifesting a cross-linguistic change in the evaluative component's structural function, regardless of whether or not there is any concomitant alteration in the evaluated target. For example, when the Chinese attitudinal evaluation 他的宝贵建议 (his valuable suggestion) is recreated in English as *His suggestion is valuable*, it can be seen that although the evaluated target, i.e., his suggestion, remains the same, the coupling pattern shifts from [Epithet + Target] to [Attribute + Target].<sup>1</sup> Here the terms of Epithet and Attribute represent the respective structural functions of 宝贵 (valuable) and *valuable*. For the sake of simplicity, the coupling pattern shift is labeled, as done below in this paper, as [Epithet→Attribute], giving prominence only to the change in the structural functions of the evaluative components.

To carry out the investigation, this study drew on the appraisal theory and the idea of coupling developed in systemic functional linguistics (hereafter SFL), which has greatly influenced and will continue to influence academic discourse studies and relevant pedagogical practices (Oakey, 2020), to

characterize the occurrences of coupling pattern shifts both quantitatively and qualitatively. Specific concerns are with: (i) the variety and distribution of attitudinal resources involved in the corresponding attitudinal evaluations concerned in the corpus; (ii) the variety and frequency of coupling pattern shifts shown by the corresponding attitudinal evaluations; and (iii) the shifts or variations manifested by the corresponding coupling patterns in terms of the evaluative and evaluated components. The research seeks to increase LSP instructors' and practitioners' knowledge about the potential rhetorical variations across languages and inform LSP research and pedagogy, especially for the benefit of those students with English or Chinese as the foreign or second language.

## 2. Theoretical framework

### 2.1. The evaluative system of ATTITUDE

As part of the multi-dimensional appraisal framework developed in SFL, the evaluative system of ATTITUDE is theorized as a dimension of interpersonal discourse semantics construing and categorizing “our feelings, including emotional reactions, judgment of behavior and evaluation of things” (Martin & White, 2005, p. 35). Here the concerns of attitudinal evaluation differ from what are commonly addressed by epistemic evaluation in relation to the appraisal resources of ENGAGEMENT and the metadiscourse resources of hedges and boosters (see Hyland & Tse, 2004), because epistemic evaluation is primarily oriented to representing people's commitment to the truth values of propositions and their negotiation of intersubjective stances.

The appraisal system of ATTITUDE incorporates three categories of attitudes, including affect, appreciation and judgment, which can be more specifically sub-categorized. Thus, affect deals with people's emotional states in terms of un/happiness, in/security, dis/satisfaction, and dis/inclination; judgment addresses people's character and behavior, characterizing normality, capacity and tenacity on the basis of social ethics, and veracity and propriety on the basis of legal or religious rules; appreciation concerns itself with people's aesthetic evaluation of semiotic and natural things or phenomena in relation to their impact, value, quality, internal complexity and balance, and accordingly makes distinctions between reaction, valuation and composition (Martin & White, 2005).

As a system at the stratum of discourse semantics, ATTITUDE can be realized across a wide range of lexicogrammatical choices by means of either explicit inscription or implicit invocation. Yet it has to be noted that invoked attitudes are beyond the interest of the present research. This is not to suggest that they are irrelevant, only that their occurrences in academic discourse are normally invoked indirectly or implicitly through grading experiential meanings (Hood, 2010); thus they are not as crucial as inscribed attitudes for exploring cross-linguistic coupling pattern shifts. Moreover, the deployment of attitudinal evaluations is genre-specific as well as register-specific, and academic discourse has been shown to be characterized by a preference for expressions of appreciation instead of affect and judgment (Hood, 2006, 2010). This imbalanced preference indicates that ATTITUDE is also a skew system in terms of the probability of the actual use of its subcategories (cf. Matthiessen, 2015).

## **2.2. The coupling of attitudes and evaluated targets**

Attitudinal evaluations are generally directed at certain targets, and evaluative attitudes relate to their targets by means of coupling. In SFL, coupling is first proposed as a concept describing the combination of “appraisal selections and what is being appraised” (Martin, 2000, p. 164). Later, the concept is extended to model the ways in which meanings combine along the instantiation hierarchy within and across ranks, strata and metafunctions (Martin, 2010). By definition, coupling offers a revealing perspective on how interpersonal meanings instantiated as evaluative attitudes can be woven together with ideational meanings instantiated as evaluated targets to construe both the subjective and objective aspects of knowledge-building in academic discourse.

Attitudes		Evaluated targets	Examples (attitude in italics, target in bold, embedding with square brackets)
Epithet	ascriptive	Thing	<i>successful communication</i>
		Thing	<b>The communication</b> was <i>successful</i> .
		Macro-thing	It is <i>important</i> <b>[[to examine the evidence for the claim]]</b> .
Attribute		Meta-thing	It is <i>not surprising</i> <b>[[that language about music is often metaphorical]]</b> .
		Macro-thing	making it <i>difficult</i> <b>[[to outline a full picture of the variations]]</b>
	causative	Meta-thing	Bai has made it <i>clear</i> <b>[[that there is no single best method in ...]]</b> .
		Thing	<b>The design</b> was considered (to be) <i>unethical</i> .
	projected	Macro-thing	Marx considered it <i>appropriate</i> <b>[[to commence both sets of proceedings in the Supreme Court]]</b> .
Adjunct	circumstantial	Event	The information was <i>successfully communicated</i> .
	interpersonal	Thing	<i>Thoughtlessly</i> , <b>the mayor</b> neglected his family.
		Meta-thing	<i>Unsurprisingly</i> , <b>language about music is often metaphorical</b> .
Thing		Thing	<b>That deal</b> is a commercial <i>success</i> .
		Macro-thing	The <i>challenge</i> for the analyst is <b>[[to delve rigorously into ...]]</b> .
		Meta-thing	The <i>problem</i> with either approach is <b>[[that written questions are ...]]</b> .
Event		Thing	<b>The plan</b> <i>succeeded</i> .
		Meta-thing	What <i>matters</i> is <b>[[ that spoken language can now occupy the place ...]]</b> .

Table 1. Possible patterns of coupling attitudes with evaluated targets.

In coupling patterns, evaluative attitudes can be inscribed lexicogrammatically through a variety of means. As shown in Table 1, an attitude may be realized explicitly through an adjective functioning structurally as an Epithet in a nominal group or as an Attribute in an ascriptive relational clause; at other times, the evaluative attitude can also be encoded via an Adjunct in a clause, a Thing functioning as the head of a nominal group, or an Event realized by a head verb in a clausal process. Noteworthy here is that attitudinal Epithet, Attribute and Adjunct can be jointly referred to with the SFL term of Quality because of their similar function of expressing qualities of entities, actions, events or propositions (Tucker, 1998; Halliday & Matthiessen, 1999, 2014). An important caveat about attitudinal Attribute is that its lexicogrammatical realization is here confined to adjectives functioning as quality attributes, which may also appear as “causative Attributes” (Davidse, 1999, p. 198) or Attributes projected through mental processes.

Regarding the attitudinally evaluated targets, systemic functional descriptions suggest that they can be broadly categorized into Things, Events, Macro-things denoting acts, and Meta-things denoting propositions and proposals

(Halliday & Matthiessen, 1999, 2014). As exemplified in Table 1, while Things are typically evaluated by Epithets and Attributes, Events are commonly evaluated by attitudinally-charged circumstantial Adjuncts. Identified in SFL respectively as meta-phenomena and macro-phenomena, Meta-things and Macro-things are usually construed lexicogrammatically by embedded clauses (Halliday & Matthiessen, 1999, 2014). Interestingly, they are both normally evaluated by attitudinal Attributes and Things, except that the former often appear ready-made as projections of proposals or propositions. In addition, a Meta-thing evaluated metaphorically via an intensive relational clause can also be alternatively assessed congruently by an interpersonal comment Adjunct (Halliday & Matthiessen, 2014).

With evaluative attitudes and evaluated targets thus characterized, the coupling patterns in question can be specified as those whose evaluative components exhibit cross-linguistic shifts in structural function, to the exclusion of those that are convergent in their use of attitudinal resources. This is not simply because divergent coupling patterns in this study are, as is generally the case in contrastive cross-linguistic investigations, more revealing and interesting than those convergent ones, but crucially because our data present few cases in which the structural functions of the evaluative components stay unchanged but the evaluated targets change cross-linguistically.

### 3. Data and method

The data used for this study consist of a collection of RA selected from two prestigious refereed bilingual journals published in China. The first one is *Science China-Earth Sciences* (SCES) (中国科学: 地球科学), a monthly multidisciplinary academic journal supervised by the Chinese Academy of Sciences and included in Q1 of the Science Citation Index. The second one is *Acta Psychologica Sinica* (APS) (心理学报), the flagship journal of the Chinese Psychological Society, with its English version currently covered by SCOPUS and ESCI (Emerging Sources Citation Index) in the Web of Science. While the former journal requires the authors to provide the English versions of their Chinese RA once they are accepted, the latter journal supplies the English translations of the accepted Chinese RA with the authors' subsequent revision and refinement, as well as the editorial board members' final approval. To a considerable extent, the high ranking of



the journals helps qualify the selected RA as reliable and valid analytical data for the present study. Because of this, the two journals, as the only two high-ranking bilingual academic publications available, were used for the data collection of the study.

As the data had to be edited and annotated manually, a relatively small number of RA were randomly selected from each of the two bilingual journals. Specifically, a total of 30 RA in two linguistic versions were collected, including 15 psychological articles and 15 earth science articles, all of which were published in both Chinese and English versions between 2020 and 2021. In line with Granger and Lefer's (2020) interpretation, the data described here constitute a parallel corpus of academic discourse from two disciplinary fields, with the Chinese sub-corpora containing 390480 characters and the English sub-corpora 238875 words (see Table 2).

	Chinese sub-corpus (characters)	English sub- corpus (words)
Length of APS texts (range)	7956-16241	4776-9547
Average length of APS RA	11698	7107
Length of SCES texts (range)	7307-41964	4261-27807
Average length of SCES RA	14334	8818
Total number of words/characters	390480	238875
Average length of RA	13016	7963

Table 2. Description of the corpus.

The use of a parallel corpus for the study is firstly motivated by the conception of interlingual translation as a semiotic process of re-instantiating the meaning of the source text through the lexicogrammatical resources of the target language (Martin et al., 2022). This conception entails that interlingual translation shows more convergence and equivalence at the more abstract stratum of semantic organization but more divergence and variations at the less abstract stratum of lexicogrammatical realization (Matthiessen, 2001, 2014; Teich, 2001). Secondly, in comparison with comparable corpora, parallel corpora can serve, by offering an in-built and sound *tertium comparationis*, as a powerful heuristic for identifying paradigms of correspondences between languages (Johansson, 2007; Granger & Lefer, 2020) and an ideal common platform for contrastive analysis (Connor & Moreno, 2005; Hasselgård, 2020). This makes it possible and fruitful to implement a direct comparison of the cross-linguistically equivalent

attitudinal evaluations and establish their coupling pattern shifts. Additionally, the use of a parallel corpus for the present study is also meant to further enhance the awareness that translation, as translingual practice, can constitute a valuable pedagogical tool for LSP instruction (Velasco-Sacristán 2009; Kelly & Bruen 2015; Beiler & Dewilde 2020).

Since computer tools are unable to discriminate evaluative coupling patterns automatically, intensive manual work was undertaken to identify and annotate the target coupling pattern shifts. After the main texts of the RA were collected, the work proceeded by identifying the attitudinal resources in both versions of the RA, comparing their correspondence in expressing equivalent attitudinal evaluations, and then tagging the target coupling patterns and their cross-linguistic shifts. In this process, caution was exercised when dealing with English attitudinal evaluations that may show explicit translation effects of the source texts. The entire work involved two coders including the author and a research assistant, and the inter-coder reliability was approximately 95.2%. The coders discussed the discrepancy and agreed on the final result of the data coding. Then the data were normalized to 10,000 words or characters to facilitate the comparison between the two sub-corpora.

To investigate and characterize the cross-linguistic coupling pattern shifts, this research undertook a sequential explanatory mixed-methods research (MMR) study. Using the MMR notation system (see Riazi, 2016), the mixed-methods design can be represented as *quan*→*QUAL*, suggesting that more weight is given to the follow-up method. The quantitative analysis, using non-parametric chi-square tests, looked into the uses of the attitudinal resources concerned in the parallel corpus and the occurrences of cross-linguistic coupling pattern shifts categorized in terms of the evaluative components' changes in structural functions. Then qualitative analysis was conducted to discuss the features of the cross-linguistic coupling pattern shifts in connection with the results obtained from the quantitative analysis. This analysis revealed different kinds of cross-linguistic coupling pattern shifts and how they occur with concomitant target change, without target change, and with lexicogrammatical delicacy variation.

## 4. Results and discussion

### 4.1. Frequencies of attitudinal resources and coupling pattern shifts

As shown in Table 3, both the Chinese and the English sub-corpora demonstrate a relatively small number of uses of the attitudinal resources concerned, totaling respectively 11.1 instances and 20.1 instances per 10,000 characters/words. However, the chi-square test reveals that the two sub-corpora exhibit a significant difference in the total frequency of use of the attitudinal resources ( $X^2=132.12$ ,  $df=4$ ,  $p<0.001$ ). This result indicates that the English RA are more in favor of explicit expression of attitudinal evaluations than their Chinese counterparts, thus conforming to Mu et al.'s (2015) finding about the metadiscursive use of attitude markers in English and Chinese RA.

Evaluative category	Chinese sub-corpus		English sub-corpus		Difference	p-value
	Raw number	Per 10,000 characters	Raw number	Per 10,000 words		
Attribute	107	2.7	232	9.7	-7.0	0.0000
Epithet	101	2.6	116	4.9	-2.3	0.0000
Adjunct	79	2.0	84	3.5	-1.5	0.0004
Thing	127	3.3	17	0.7	2.6	0.0000
Event	19	0.5	31	1.3	-0.8	0.0005
Total	433	11.1	480	20.1	-9.0	0.0000

Table 3. Frequency of use of attitudinal resources in the two sub-corpora.

The p-values of the chi-square tests also show that each category of the identified attitudinal resources differs significantly in frequency of use between the two sub-corpora. Most notably, the Chinese sub-corpus shows 2.6 more uses of evaluative Thing per 10,000 characters than the English sub-corpus, whereas the English sub-corpus contains more uses of evaluative Attribute, Epithet, Adjunct and Event than the Chinese sub-corpus, with the differences ranging from 0.8 to 7.0 instances per 10,000 words/characters. To a large extent, this suggests that except evaluative Thing, the English RA tend to demonstrate a much greater preference than their Chinese versions for attitudinal evaluations to be expressed, in descending order, via the resources of Attribute, Epithet, Adjunct and Event. Arguably, the frequencies and differences are indicative of the attitudinal meaning-making potential of the languages at issue in general, and the socioculturally shaped evaluative coding orientations of language users involved in particular.

Coupling pattern shifts (Group 1)	Raw number	%	Coupling pattern Shifts (Group 2)	Raw number	%	Difference	p-value
[Attribute→Epithet]	58	34.12	[Epithet→Attribute]	40	13.75	20.37	0.0000
[Attribute→Adjunct]	28	16.47	[Adjunct→Attribute]	45	15.46	1.01	0.7746
[Epithet→Adjunct]	53	31.18	[Adjunct→Epithet]	31	10.65	20.53	0.0000
[Quality→Thing]	13	7.65	[Thing→Quality]	118	40.55	-32.90	0.0000
[Event→Thing]	5	2.94	[Thing→Event]	16	5.50	-2.56	0.2039
[Quality→Event]	13	7.65	[Event→Quality]	41	14.09	-6.44	0.0380
Total	170	100	Total	291	100	0	0.0000

Table 4. Frequency of Chinese-English cross-linguistic coupling pattern shifts.

Aside from the differences in employing attitudinal resources, the two sub-corpora also display two groups of cross-linguistic coupling pattern shifts which exhibit a significant discrepancy. This is brought to light in Table 4 ( $X^2=92.05$ ,  $df=5$ ,  $p<0.001$ ), where can be seen the statistical results of six pairs of cross-linguistic coupling pattern shifts identified in the Chinese-English direction. The arrows in the table serve to signal how the coupling pattern shifts manifest themselves in the cross-linguistic re-instantiation of attitudinal valuations.

The p-values and percentage differences in Table 4 suggest that the six pairs of cross-linguistic coupling pattern shifts can be alternatively grouped into two categories. In the first category, as signaled by the shaded numbers, the shifts between Attribute and Adjunct, like the ones between Quality and Event and between Event and Thing, show no significant differences in the two opposite directions. This means that the afore-mentioned significant difference ( $p=0.0000<0.001$ ) between the six pairs of cross-linguistic shifts is principally engendered by those in the second category, namely, the bidirectional shifts of [Attribute→←Epithet], [Epithet→←Adjunct] and [Quality→←Thing].

Within the second category of coupling pattern shifts, the third pair shows a striking contrast with the first two pairs. To be specific, [Thing→Quality] stands out for manifesting a much greater likelihood of occurrence than its opposite in the Chinese-English re-instantiation, whereas [Attribute→Epithet], like [Epithet→Adjunct], turns out to be much more liable to occur in the cross-linguistic re-instantiation than their opposites showing shifts the other way around. Besides the horizontal differences,

Table 4 also displays proportions of occurrences that distinguish between the three pairs of coupling pattern shifts vertically. In an asymmetrical order, the proportions show that while one direction tends to see the most and least frequent occurrences with the shifts of [Attribute→Epithet] and [Quality→Thing] respectively, the opposite direction tends to witness the most and least frequent occurrences with the shifts of [Quality→Thing] and [Epithet→Adjunct] in sequence.

Part of the above picture can be accounted for by referring to the insight that where English prefers to introduce qualities via Epithet in a nominal group, Chinese prefers to introduce qualities via Attribute in an ascriptive relational clause (see Halliday & Matthiessen, 1999, p. 304). The rest of the picture may be explained in light of SFL's account of the most pervasive metaphoric shifts towards "thingness" in scientific discourse, namely, "quality=>thing" and "process=>thing" (Halliday & Matthiessen, 1999, p. 250). Obviously, the coupling pattern shift of [Quality→Thing] matches the metaphoric shift "quality=>thing", thus the greater frequency of its opposite, namely, [Thing→Quality], may be construed as reflecting a cross-linguistic metaphoric propensity: where English tends to encode an evaluation by means of Quality, Chinese tends to reify the evaluative quality as a thing.

An analogical explanation can be extended to the significantly higher frequency of [Epithet→Adjunct] in the Chinese-English re-instantiation. As the metaphoric shift 'process=>thing' typically involves transforming the adjunctival modifier (if there is one) of a process or an Event into a thing-modifying epithet, the coupling pattern shift in question may be interpreted as a natural reflection of another cross-linguistic metaphoric propensity: where English prefers a process or an Event to be evaluated by adjunctival means, Chinese prefers to nominalize it as a thing so as to be evaluated by epithetical means.

## 4.2. Features of cross-linguistic coupling pattern shifts

Based on the preceding quantitative findings, this section proceeds to spell out how the cross-linguistic coupling pattern shifts distinguish themselves in relation to the relevant evaluative resources and evaluated targets. For the sake of exposition, the section is divided into three subsections, revealing and discussing sequentially the shifts in tandem with target change, the shifts with unchanged targets, and the shifts manifesting lexicogrammatical

delicacy variations. In this process, illustrative examples are given with interlinear coding.<sup>2</sup>

#### 4.2.1. Shifts in tandem with target change

Theoretically speaking, the evaluated targets in cross-linguistic coupling pattern shifts should keep unchanged, despite the variation in the evaluative resources. However, some types of shifts figure prominently in the data because of the concomitant target change. This can first be illuminated via the shifts of [Adjunct→Epithet] and [Attribute→Adjunct] in Examples 1-2.

- (1) 他们更可能全面分析未来事件对情感的影响,  
they more likely fully analyze future events to emotions SUB impact,  
更加理性地进行预测。  
more rationally to predict  
'They are more likely to fully analyze the impact of future events  
on emotions and make more rational predictions.'
- (2) 如果中央凹词 n 为高频词时, 读者对词 n+1  
If foveal word n be high frequency word time, reader CV word n+1  
的加工更容易。  
SUB processing more easy  
'When the foveal word n is a high frequency word, the reader can process  
the word n+1 more easily.'

Along with the shifts of the Chinese Adjunct 理性地 and Attribute 容易 into the English Epithet *rational* and Adjunct *easily*, the original evaluated targets 预测 and 加工, as an Event and a Thing, change into the Thing *predictions* and the Event *process* respectively. These target changes give the impression that the Chinese-English re-instantiations can be taken as a cross-linguistic process of metaphorization towards thingness or, as characterized by Steiner et al. (2022), de-metaphorization from thingness. From the perspective of SFL, the coupling pattern shifts can be interpreted as the result of the distinctive structural functions of Epithet, Attribute and Adjunct: while Epithet and Attribute normally work to construe the quality of a Thing, Adjunct normally operates to qualify or embellish an Event (Halliday & Matthiessen, 1999, 2014).

- (3) 由于城市生态系统服务具有自然和社会的双重

because city ecosystem services have nature and society SUB dual  
属性, 且空间和时间上在生产者和使用者  
properties, and space and time in CV producers and consumers  
之间流动, 对其进行量化非常困难。  
between flow, CV them to quantify very difficult  
'It is a difficult task to quantify urban ecosystem services because they  
have both natural and social properties and are flowing between  
producers and consumers in space and time.'

- (4) 含水 矿物的脱水 熔融及名义上  
water-bearing minerals SUB dehydration melting and nominally  
无水 矿物中羟基 出溶 可能是俯冲 隧道  
anhydrous minerals in hydroxyl exsolution may be subduction channel  
中超高压变质 岩发生部分熔融的关键。  
in UHP metamorphic rocks happen partial melting SUB key  
'Dehydration and melting of water-bearing minerals and hydroxyl  
exsolution of nominally anhydrous minerals may be the key factors for  
the partial melting of UHP metamorphic rocks in channels.'

Unlike the shifts of [Attribute $\rightarrow$ ←Adjunct] and [Epithet $\rightarrow$ ←Adjunct], the shifts of [Attribute $\rightarrow$ ←Epithet] and [Quality $\rightarrow$ ←Thing] were found to occur only occasionally in tandem with target change. This can be clarified through Examples 3-4, which illustrate in sequence how the evaluative resources shift from the Chinese Attribute 困难 and Thing 关键 to the English Epithets *difficult* and *key*. Here the shifts of [Attribute $\rightarrow$ Epithet] and [Thing $\rightarrow$ Quality] are concomitant with the changes of the evaluated targets from the Chinese Macro-thing 对其进行量化 and material Thing 含水矿物的...羟基出溶 to the English semiotic Things *task* and *factors* respectively. Noteworthy in these target changes is that in Halliday and Matthiessen's (1999, 2014) terms, they involve abstracting a semiotic Thing either from a Macro-thing or from a natural Thing.

To recap briefly, [Attribute $\rightarrow$ ←Epithet] and [Quality $\rightarrow$ ←Thing] need to be distinguished from [Attribute $\rightarrow$ ←Adjunct] and [Epithet $\rightarrow$ ←Adjunct] because the target change in the former case is rendered by means of abstraction instead of (de)metaphorization. This difference may be a critical influence on the frequency of the shifts being compared. Finding differences of this kind empirically supports the previous emphasis that when theorizing

appraisal or practicing appraisal analysis, both the evaluative and the evaluated components of coupling patterns should be taken into consideration and accounted for (Bednarek, 2009; Su & Hunston, 2019; Szenes, 2021).

#### 4.2.2. Shifts with unchanged targets

Not all the cross-linguistic coupling pattern shifts are accompanied by target change. Rather, as already hinted at above, some shifts are distinctive by virtue of their accommodation of unchanged targets. In particular, the bidirectional shifts of [Attribute $\rightarrow\leftarrow$ Epithet] and [Quality $\rightarrow\leftarrow$ Thing], though manifesting occasional target change, were commonly seen in the data with targets remaining unchanged. Examples 5-7 are given below to illuminate this point.

- (5) 文本信息的可见性对修正眼跳的影响是  
 text information SUB visibility CV correct saccades SUB effect be  
 显著的。  
 significant  
 ‘The visibility of text information has a significant effect on correcting saccades.’
- (6) 只有当一项任务没有清晰的解决路径时,才能  
 only when a MEAS task NEG have clear solve path time, VADV can  
 体现出创造力。  
 manifest CV creativity  
 ‘Creativity only manifests itself when the path to solving a task is unclear.’

Firstly, Examples 5-6 illuminate the bidirectional shifts of [Attribute $\rightarrow\leftarrow$ Epithet]. The Chinese evaluative resources involved are the Attribute 显著的 and the grammatically negated Epithet 清晰的. Their English equivalents are respectively the Epithet *significant* and the lexically negative Attribute *unclear*. Despite the shifts in the evaluative resources, the evaluated targets are left unchanged, with the one in Example 5 being 影响 (effect) and the one in Example 6 路径 (the path).

The reason why the targets can often keep unchanged probably lies in the functional similarity between Attribute and Epithet in both Chinese and English: they can both serve as qualitative characterizations of Things (cf.



Halliday & Matthiessen, 2014). This also explains why in both languages an Epithet tends to be located in a pre-head position and an Attribute in a predicative complement position. Since the former position presents the evaluation more like an intrinsic quality of a Thing and the latter position helps bring to the fore an extrinsic quality of the evaluated target (Pérez Blanco, 2016), it is important to be aware that [Attribute→Epithet] can be perceived as a shift from a more prominent, subjective evaluation to one that is less prominent but more “easily assumed as shared and not questioned by readers” (Pérez Blanco, 2016, p. 50).

- (7) 皮亚杰的思想丰富庞杂, 著述众多, 所涉及的  
 Piaget SUB thinking rich complex, writings numerous, involved  
 学科领域广泛, 这增加了我们今天从整体上去  
 discipline field wide, this increase ASP we today CV whole on to  
 理解和把握皮亚杰理论的难度。  
 understand and grasp Piaget theory SUB difficulty  
 ‘The richness and complexity of Piaget’s thinking, his numerous writings,  
 and the wide range of disciplines involved make it difficult for us to  
 understand and grasp Piaget’s theory as a whole today.’

Since Things can also perform the function of qualitative characterization, it was also common to find the bidirectional shifts of [Quality↔Thing] without target change in the data. As shown in Example 7, the first shift is from the juxtaposed Chinese Attributes 丰富 and 庞杂 to the English Things *richness* and *complexity*, and the second shift is from the Chinese Thing 难度 to the English causative Attribute *difficult*. In both shifts, the evaluated targets remain unchanged, and they are *Piaget’s thinking* (皮亚杰的思想) in the former case and the Macro-thing *to understand and grasp Piaget’s theory* (理解和把握皮亚杰理论) in the latter case. At this point, it can be argued that the shifts are possible largely because both the Attributes and the Thing specified above are capable of characterizing the targets qualitatively.

- (8) 重要的是, 来源身份和群体认同的交互作用  
 important be, source identity and group identification SUB interaction  
 显著。  
 significant  
 ‘Importantly, the interaction between source identity and group  
 identification was significant.’

## (9) 对内部的批评和异议表现得相对包容和

CV internal criticism and dissent show VPART relative inclusiveness and  
谅解, 有利于促进群体的内部团结而。

understanding, conducive to promote group SUB internal cohesion thus  
获得长远发展

gain long-term development

‘The relative inclusiveness and understanding of internal criticism and  
dissent contribute to the long-term development of the group’s internal  
cohesion.’

Unlike [Attribute $\rightarrow\leftarrow$ Epithet] and [Quality $\rightarrow\leftarrow$ Thing], [Attribute $\rightarrow\leftarrow$ Adjunct] and [Quality $\rightarrow\leftarrow$ Event] were found to be two types of shifts that only allow for occasional occurrences of leaving evaluated targets unchanged. As illuminated in Examples 8-9, the fronted Chinese Attribute 重要的 couples with the same propositional Meta-thing as that evaluated by the English comment Adjunct *importantly*, and the Chinese Attribute 有利, re-instantiated as the Event *contribute*, evaluates the same Thing target as represented by *inclusiveness and understanding*. Notwithstanding the consistency in evaluated targets, it has to be noted that large functional discrepancies between Adjunct and Attribute and between Quality and Event may play a crucial role in making it difficult for [Attribute $\rightarrow\leftarrow$ Adjunct] and [Quality $\rightarrow\leftarrow$ Event] to occur, without target change, as frequently as [Attribute $\rightarrow\leftarrow$ Epithet] and [Quality $\rightarrow\leftarrow$ Thing].

#### 4.2.3. Shifts with lexicogrammatical delicacy change

Apart from the characteristic change in evaluative components’ structural functions, some coupling pattern shifts in the data were found to manifest lexicogrammatical delicacy variations in representing evaluative meaning. In these circumstances, a given evaluative meaning, represented lexically in one linguistic version, appears to be realized in the other linguistic version by a grammatical construction, which is a less delicate means, to achieve semantic equivalence. Consider the shifts of [Event $\rightarrow\leftarrow$ Thing] below.

## (10) 心理 学界 非常重视 皮亚杰在该领域

psychological community very attach importance Piaget CV this field  
的影响力。

SUB influence

‘The psychological community attaches great importance to Piaget’s influence in this field.’

- (11) 此外, 云 雷达和微波 辐射计 的发展

In addition, cloud radar and microwave radiometers SUB development  
也为云物理探测做出了很大贡献。

also CV cloud physics detection make ASP great contribution

‘In addition, the development of cloud radar and microwave radiometers has also contributed to cloud physics detection.’

In Example 10, the English evaluative Thing *importance* has to be integrated grammatically with *attaches* to realize the attitudinal evaluation expressed lexically by the Chinese evaluative Event 重视. Likewise, the Chinese evaluative Thing 贡献 in Example 11 has to be combined grammatically with 做出了 (made) to realize the attitudinal evaluation re-instantiated lexically by the English evaluative Event *contributed*. Clearly, it is the lexicogrammatical delicacy variation that enables the evaluations to be functionally equivalent. Similar phenomena are especially typical of the shifts of [Quality  $\rightarrow$   $\leftarrow$  Thing], as exemplified below.

- (12) 结果发现, 面对疫 情, 完全 不 焦虑、不

result find, face epidemic situation, completely NEG anxious NEG  
担忧 和 不 恐惧的人 只 占 3%-4%.

worried and NEG fearful people only account for 3%-4%

‘The results showed that in the face of epidemic situation, only 3% to 4% of the population had no anxiety, worry or fear at all.’

- (13) 来自外群体的 消极 群体 评价 被 认为 带有

from outgroup SUB negative group evaluation DISP consider have  
敌意 和 偏见, 而 来自内群体的 消极 群体 评价

hostility and bias, while from ingroup SUB negative group evaluation  
则 更 具 建设性。

VADV more have constructiveness

‘Negative group evaluations from outgroup are considered hostile and biased, while those from the ingroup are more constructive.’

- (14) 尤其是,最近一些新 生成 的 全球数据集 对于  
 particularly be, recent some newly generated SUB global datasets CV  
 模型 参数化 具有 重要的 价值。  
 model parameterization have important value  
 ‘In particular, some new global datasets are very valuable to model  
 parameterization.’

Example 12 presents a shift from three lexically negative Chinese Epithets (不焦虑, 不担忧 and 不恐惧) to three paratactic English Things in a grammatically negated possessive clause (i.e., *had no anxiety, worry or fear*). Example 13 demonstrates a shift from two Chinese possessive grammatical constructions (i.e., 带有敌意和偏见 and 更具建设性) to three English Attributes (i.e., *hostile, biased and more constructive*). From the perspective of Halliday and Matthiessen (1999, 2014), in the grammatical constructions, the possessive verbs 带有 and 具(有) encode the state of having or possessing, and the nominal groups 敌意和偏见 and 建设性 represent the Things possessed. As for Example 14, the English Attribute *valuable* corresponds to the Chinese possessive construction 具有重要的价值, directing an attitudinal evaluation to the same target as expressed by 全球数据集. The construction is especially interesting given that the Thing 价值 is recoupled with an evaluative Epithet.

At this point, it needs to be reiterated that, the shift of [Thing→Quality] is, as indicated in Table 4, significantly preferred over the shift of [Quality→Thing] in the Chinese-English re-instantiation. To Steiner et al. (2022), this significant preference can be taken as reflecting a cross-linguistic propensity of de-metaphorization from thingness. However, according to Shen (2017), the significant preference could be largely attributed to the different categorial emphases in Sinitic and Indo-European languages: while English stresses categorial separation and thereby favors the use of “being” to encode attitudinal evaluations, Chinese stresses categorial inclusiveness and hence typically prefers attitudinal evaluations to be expressed by means of “having” or “possessing” a reified or nominalized quality. In a word, the significant preference may be largely rooted in the Chinese preference for possessive constructions to express attitudinal evaluation.

Summarizing the above analysis, it becomes evident that close evaluative equivalents in cross-linguistic re-instantiations may further vary in lexicogrammatical delicacy in addition to structural functions. Delicacy

variations of this kind are particularly informative about how Chinese and English Things may be configured in clauses to express attitudinal evaluations. A possible explanation for their occurrences may lie in the socioculturally shaped unique meaning potentials and preferences of Chinese and English in representing equivalent meanings.

## 5. Conclusion and implications

Based on a parallel corpus of RA published in prestigious journals, this MMR study has explored the corresponding coupling patterns of attitudinal evaluations in two different linguistic versions of academic discourse, and has discussed the manifested cross-linguistic shifts in terms of evaluative attitudes and evaluated targets. The findings have revealed that in comparison with the distinctive preference for evaluative Thing in the Chinese version, the English version is significantly more in favor of evaluative Attribute, Epithet, Adjunct and Event in expressing interpersonal attitudinal meanings. Among the coupling pattern shifts identified in the Chinese-English re-instantiation, the shifts of [Attribute→Epithet], [Epithet→Adjunct] and [Thing→Quality] were found to be significantly more frequent than their opposites. In the light of SFL's probabilistic conception of language (Halliday, 2005), the significant preferences and differences indicate what Chinese and English RA may favor and disfavor in encoding attitudinal evaluations. More importantly, the findings have demonstrated that while the shifts of [Attribute↔Adjunct] and [Epithet↔Adjunct] occur typically in tandem with target change, the shifts of [Attribute↔Epithet] and [Quality↔Thing] appear normally without target change, and the shifts of [Event↔Thing] and [Quality↔Thing] are more liable to display lexicogrammatical delicacy variations. It was argued that the shifts of [Thing→Quality] and [Epithet→Adjunct] may be motivated and governed by a cross-linguistic process of de-metaphorization from thingness. In brief, what happen to the evaluative and evaluated components in the coupling pattern shifts reflect the aspects in which Chinese and English academic discourse may converge or diverge from each other for attitudinal evaluation.

What should be noted about the above differences, preferences, shifts and variations is that, as suggested by Xie (2020), they have much to do with the socioculturally shaped linguistic and rhetorical characteristics of academic writing in the two languages examined. However, as there are always

probabilistic tendencies operating in language use (Tucker, 2007), and not all lexicogrammatical choices available to language users are equally probable in their writing and translation, to the above influences must be added the impact of the language users' bilingual meaning potential and orientations. In Martin's (2010) terms, this amounts to say that the aforementioned differences, preferences, shifts and variations are ultimately shaped jointly by the phylogenetic reservoir of meanings available in a culture and the ontogenetic repertoires of meanings mobilized and deployed in specific academic writings and translations.

The key contribution of this study is to the corpus-based LSP research in the spheres of contrastive rhetoric and translation of written texts. Firstly, it seems very hard to see how any other method could lead to such an explicit characterization of the cross-linguistic coupling pattern shifts as given in this study, despite possible translation effects on the linguistic features analyzed. In effect, the study can be taken as complementary to the previous ones which usually depend on comparable corpora for uncovering cross-linguistic rhetorical differences or variations in academic writings (e.g., Kim & Lim, 2013; Mu et al., 2015). Hopefully, the complementarity can inspire more corpus-based cross-linguistic LSP research that looks beyond the typology and distribution of evaluative features to their coupling behavior and potential pattern shifts.

Secondly, by sorting out the evaluative and evaluated resources into functional categories which are neither too general nor too delicate, the study also adds to the picture of different approaches to evaluative language, thereby contributing to the development of "a local grammar of evaluation" (Hunston & Sinclair, 2000; Hunston & Su, 2019) for both Chinese and English. Such a grammar enriched by the new contribution may further theoretically grounded research into LSP texts as to how the meaning-making choices in attitudinal evaluations as well as evaluations of other kinds may couple intralinguistically and vary cross-linguistically.

Moreover, investigating functionally equivalent representations in Chinese and English RA, the study extends the range of LSP research interests in relation to specialized translation. As far as the few studies of paired bilingual academic texts (e.g., Alharbi & Swales, 2011; Perales-Escudero & Swales, 2011) are concerned, the extension can be conceived as going beyond the generic features and variations into the realm of local rhetorical features and shifts. In this process, the study helps bring to the fore the

nature of LSP translation, which can be construed, in line with SFL-based translation research (see Matthiessen, 2001, 2014; Kunz & Teich, 2017), as a field of study especially in relation to contrastive linguistics.

The study reported above has implications for LSP pedagogy, especially the teaching of languages for academic purposes to students with English or Chinese as the foreign or second language. For one thing, the sorting approach to the evaluative and evaluated resources, if incorporated into a pedagogical metalanguage for explicit, scaffolded teaching of LSP literacy, may help LSP learners understand the what and the how of coupling meaning-making choices and thus avail them in identifying, distinguishing and orchestrating evaluative patterns that are possible, acceptable and preferable in different varieties of LSP writings. Accordingly, the sorting approach may be used as a heuristic to appreciate language-specific rhetorical features and propensities and develop pedagogical materials aimed at improving LSP learners' rhetorical repertoires.

For another, informing LSP learners how coupling patterns may vary or shift when undergoing cross-linguistic re-instantiation may well raise their awareness of possible areas of intercultural rhetorical interference, divergences and difficulties in writing and translating value-laden LSP texts in a foreign or second language. In this respect, instead of separate lexicogrammatical choices, what deserve greater attention are their mutual relations and coupling behavior; therefore, a critical dimension of developing LSP learners' rhetorical literacy and meaning potential would be to encourage them to configure right linguistic choices into generically and culturally valued coupling patterns. In specialized translator training, this recognition may scaffold instructors' analyzing, assessing and modelling of cross-linguistic evaluative equivalence, and bolster trainee students' capacity for differentiating between ideational and interpersonal correspondences, thus greatly diluting their inappropriate translations.

That said, it has to be admitted that the relatively small size of the parallel corpus used in the study may suggest cautious interpretation of the findings. To overcome this limitation, future research needs to enlarge the sample size of the corpus by including similar data from more disciplinary fields and functional varieties. Further research thus undertaken, including similar studies involving different non-English languages, may help yield a more comprehensive characterization of cross-linguistic coupling pattern shifts as well as more constructive implications for the development of LSP research and pedagogy.

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## NOTES

<sup>1</sup> This article follows the SFL convention whereby names of structural functions in the clause are spelt with an initial capital and names of systems with all small caps.

<sup>2</sup> The interlinear glossing follows the SFL convention and uses such abbreviations as CV (coverb), DISP (voice coverb: dispositive), MEAS (measurer), NEG (verbal particle: negative), VADV (verbal adverb), SUB (subordinating), VPART (verbal particle), and ASP (clause particle: aspectual).

