

外國語文研究

Foreign Language Studies

L angue 문 화 L iteratur

L angue K ultura Л итература

لُغَةٌ 文 化 K njievnost

M овъ B udaya L iteratura

J ęzyk K ültür ဂ ရမ်ကရာဇ်

V ăn hóa

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Foreword:

Charting Austronesian Linguistics

Spoken by at least 300 million speakers (about 4% of the world population), the Austronesian language family includes languages in Taiwan and the Philippines to the north, and Malaysia and the Indonesian archipelago to the south; its geography stretches from Madagascar to the west and to Easter Island to the east. Since the early 19th century, these languages have been the focus of historical and comparative research, offering insights into human adaptability and cultural expression.

This special issue of *Foreign Language Studies*, guest edited by Siaw-Fong Chung and Michael Tanangkingsing, presents innovative research that advances our understanding of Austronesian linguistics. The works in this collection bring to light recent developments in these languages, which highlight their broad relevance to linguistic theory and typology.

The first paper examines the phonetic and perceptual features of onomatopoeia in Cebuano, a language spoken in the Philippines. Focusing on “click” and “knock” sounds, the study investigates how native speakers produce and interpret these forms using acoustic analysis and perceptual testing. It reveals how linguistic constraints and context shape sound-symbolic expression. A comparison with Spanish speakers sheds light on both universal and language-specific aspects of onomatopoeia, enriching our understanding of how phonetics and perception influence language use.

The second paper investigates causative morphology in Paiwan, an Austronesian language spoken in Taiwan. Drawing from over 10,000 examples, the study analyzes how the affixes pa-∅, pa-ka, and pa-pe mark different types of causation. Using logistic regression, it shows that pa-∅ often signals direct causation with inanimate agents, pa-ka marks indirect causation involving animate agents or intervening factors, and pa-pe bridges the two. Cross-linguistic comparisons with Dutch and Mandarin further illuminate how languages structure causative meaning. This study also demonstrates the value of corpus-based research in documenting and analyzing lesser-studied languages.

The third is a research note discussing broader issues of language endangerment and revitalization with a focus on Taiwan's indigenous languages. It reviews current strategies such as immersion preschools, bilingual education, and master-apprentice models, pointing out the lack of quantitative evaluation. The note emphasizes the need for data-driven approaches to assess the impact of key factors like teacher training, instructional time, and community involvement. It raises important questions about policy and practice that affect language preservation in Taiwan and other Austronesian-speaking regions.

Together, these contributions reflect the vitality and interdisciplinary scope of Austronesian linguistics. From phonetic analysis and corpus methods to policy-oriented inquiry, this issue illustrates how diverse approaches can converge to deepen our understanding of language structure, use, and sustainability.

As one of the world's largest language families, Austronesian languages preserve vast stores of linguistic and cultural knowledge. Studying them not only enriches linguistic theory but also fosters respect for the communities that sustain them. Supporting documentation and revitalization efforts helps protect an essential part of our shared human heritage.

We thank all the contributors to this special issue for their thoughtful and rigorous work. Their research opens new directions for Austronesian linguistics and invites further exploration. We encourage readers to engage with this collection—from Cebuano sound symbolism and Paiwan causatives to the pressing questions of revitalization—and to appreciate the many ways these languages contribute to the study of language and life.

Special Issue Editors,
Siaw-Fong Chung and Michael Tanangkingsing

以語料庫方式研究排灣語的使役結構

古貿昌*、戴佳豪**、謝舒凱***

國立臺灣大學

摘要 ****

本研究從語料庫的角度探討排灣語中使役詞綴 (*pa-Ø-*、*pa-ka-*和*pa-pe-*) 的變異。在 Tang(295)的基礎上，本研究繼續探討排灣語使役結構中 *Ø-*、*ka-* 和 *pe-* 詞綴的使用，並對從語料庫中提取的排灣語使役結構語料進行邏輯迴歸分析。我們的研究表明此三個使役結構之間存在認知上的區別 (Verhagen & Kemmer)。迴歸模型的結果支持直接/間接致使二分法的理論，提供了對這些詞綴特徵及詞彙意義的合理解釋。具體而言，詞綴 *pa-Ø-* 與「直接致使」相關，通常用於涉及無生命參與者的事件中，且起因論旨角色直接導致受使役者的結果狀態。相反地，詞綴 *pa-ka-* 與「間接致使」相關，經常出現在有生命參與者的場景，且除了使動者之外，亦有其他一些驅動來源也導致使役事件的發生。詞綴 *pa-pe-* 則處於中間位置，偏好與不及物的結果謂語共同出現。此外，本研究亦對排灣語的三個使役前綴與荷蘭語的 *doen* 及 *laten* 以及中文的 *使* 和 *讓* 進行了跨語言比較。這些發現不僅使我們對排灣語的使役結構有更全面的認識，同時也為語言類型學中使役結構的普遍性和特殊性提供了更深刻的見解。

關鍵詞：語言變異、使役結構、語料庫語言學、R 統計

* 國立臺灣大學語言學研究所博士生

** 國立清華大學語言學研究所博士生

*** 國立臺灣大學語言學研究所教授

**** 誌謝詞：本研究成果為作者群在第四屆中研語言學論壇會上發表之“基於語料庫的排灣語使役前綴的功能與語意分析”一文之延伸，會議上得到諸多專家學者之寶貴意見，特此致謝。此外，本文的撰寫與修改過程中，獲得中央研究院張永利研究員和陳彥伶研究員的許多指導與寶貴建議，在此一併致以深深謝意。

A Corpus-based Study of Causative Constructions in Paiwan

Mao-Chang Ku*, Milingan Chia-Hao Tai**, Shu-Kai Hsieh***

National Taiwan University

Abstract****

This study examines the variation in causative affixes (*pa-Ø*, *pa-ka-*, and *pa-pe-*) in Paiwan using a corpus-based approach. Building on Tang's (295) identification of the *Ø-*, *ka-*, and *pe-* affixes in Paiwan causative constructions, we apply logistic regression analysis to data extracted from corpora. Our research suggests a cognitive distinction among the three causative subtypes (Verhagen & Kemmer). The regression model results support the theory of a direct/indirect causation dichotomy, offering a plausible explanation for the characteristics and lexical meanings of the affixes. Specifically, the affix *pa-Ø-* is associated with "direct causation," typically used in events involving inanimate participants where the cause directly results in the state of the causee. Conversely, the affix *pa-ka-* is linked to "indirect causation," often found in contexts with animate participants and additional contributing forces. The affix *pa-pe-* occupies an intermediary position, showing a preference for intransitive effected predicates. Additionally, this study conducts a cross-linguistic comparison of the Paiwan causative affixes with the causative verbs *doen* and *laten* in Dutch, and *shi* and *rang* in Mandarin. These findings enhance our understanding of Paiwan causative constructions and offer insights into the universality and specificity of causative structures in linguistic typology.

Keywords: language variation, causative construction, corpus linguistics, R statistics

* PhD student of Graduate Institute of Linguistics, National Taiwan University

** PhD student of Graduate Institute of Linguistics, National Tsing Hua University

*** Professor of Graduate Institute of Linguistics, National Taiwan University

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1. Introduction

Causative constructions are a fundamental aspect of linguistic analysis, revealing the intricate relationship between a cause and its resulting effect. These constructions, characterized by the interaction between a causer and a causee, are pivotal in understanding how different languages encode causation. The Paiwan language, an Austronesian language spoken by the Paiwan people in southern Taiwan, presents an interesting case for exploring causative constructions due to its complex verbal morphology and diverse phonological system. This study investigates the variation in causative affixes (*pa-Ø*, *pa-ka-*, and *pa-pe-*) in Paiwan from a corpus-based perspective. Building upon previous research and employing advanced statistical models, this study provides new insights into direct and indirect causation in the language. By examining these affixes, this research aims to contribute to the broader field of linguistic typology and deepen our understanding of the cognitive and pragmatic aspects of causative constructions in Paiwan.

1.1. Background Information of Paiwan

Many “Philippine-type” languages exhibit elaborate systems of nominal and verbal morphology (Blust 343). In these languages, the functional load of verbal morphology typically surpasses that of nominal morphology, as key syntactic information such as voice, aspect, and mood is marked on verbs. As a prototypical Philippine-type language, Paiwan is an Austronesian language spoken by the Paiwan people, primarily located in the southern part of Taiwan. According to statistics from the Council of Indigenous Peoples, the Paiwan population stands at approximately 108,312, accounting for 18% of the total indigenous population of Taiwan, which numbers around 588,660. This makes the Paiwan the second-largest indigenous group in Taiwan. The geographical distribution of the Paiwan people is predominantly concentrated in Pingtung County, home to 49,926 individuals, followed by Taitung County with 17,096 residents, and Kaohsiung City with 10,080 residents (Council of Indigenous Peoples, Executive Yuan 2024).

As an integral part of the Formosan languages, Paiwan showcases a rich linguistic heritage that includes complex verbal morphology and a diverse phonological system. The language is considered endangered, with efforts being made to revitalize and document it for future generations. Paiwan’s phonological system consists of 24 consonants and 4 vowels.

Distinct features include the use of epenthetic glottal stops in vowel-initial words and the presence of morphophonemic processes such as infixation and suffixation (Yeh 122). The language's syllable structure is predominantly CVCV(C), with stress typically falling on the penultimate syllable of a prosodic word.

In what follows, we will give a brief grammatical sketch of Paiwan before we delve into a corpus-based analysis of Paiwan causative constructions. It is worth mentioning that all tables and example sentences showcasing Paiwan linguistic knowledge throughout the paper are derived from the authors' own fieldnotes and original research findings, unless otherwise cited.

1.2.A Grammatical Sketch of Paiwan

Paiwan is characterized as a predicate-initial language, wherein the predicate typically precedes the subject and object in a sentence. For instance, in an equational construction, a noun serves as the predicate, as demonstrated in (1):

(1) Noun as a predicate (equational construction):
uqaljay ti Bali
 boy NOM Bali
 'Bali is a boy.'

Conversely, in verbal constructions, a verb functions as the predicate, as shown in (2):

(2) Verb as a predicate:
caqis=aken ta itung
 sew<AV>=1S.NOM OBL clothes
 'I often sew clothes.'

In both constructions, the predicate occupies the initial position in the clause. The most natural word order in Paiwan is Predicate/Verb-Subject-Object (VSO). However, an alternative grammatical structure, Predicate/Verb-Object-Subject (VOS), is also permissible, as illustrated in (3) and (4):

(3)

uri=k an ta ciqaw ti Bali
 IRR=eat<AV> OBL fish NOM Bali
 'Bali will eat fish.'

(4)

uri=kan ti Bali ta ciqaw
 IRR=eat<AV> NOM Bali OBL fish
 'Bali will eat fish.'

Additionally, negators can appear in the initial position, and nominative clitic pronouns function as second-position enclitics, as seen in (5):

(5)

ini=aken a na-kan ta ciqaw
 NEG=1S.NOM LNK PFV-eat<AV> OBL fish
 'I have not eaten fish.'

In topicalization constructions, the subject is moved to the initial position to serve as the topic of the sentence, as exemplified in (6):

(6)

a zua a tja=maca i tja-i- qayaw
 NOM that LNK 1PL.GEN=eye be.at more-be.at-front
 tua tja=ulu
 OBL 1PL.GEN=head
 'Our eyes, they are in the front of our head.' (Li 24)

This syntactic flexibility highlights the complex nature of Paiwan's sentence structure and its pragmatic use in conveying emphasis and topical information.

The voice system in Paiwan has four voices: Agent Voice (AV), Patient Voice (PV), Locative Voice (LV), and Beneficiary/Instrumental Voice (BV/IV), as outlined in Table 1. The verbal affixes corresponding to each voice type vary depending on the sentence construction.

Table 1. Voice System in Paiwan

Voice		voice forms	imperative	hortative
AV (Agent Voice)		< <i>em</i> > (<i>m</i> - or < <i>en</i> >); Ø; <i>ma</i> -	- <i>u</i> ; - <i>i</i>	
PV (Patient Voice)		< <i>in</i> >; - <i>in</i> ; (- <i>en</i>)	- <i>u</i> ; - <i>i</i>	- <i>av</i> ; - <i>aw</i> ; - <i>ay</i>
LV (Locative Voice)		- <i>an</i>	- <i>u</i> ; - <i>i</i>	- <i>ay</i>
RV (Referential Voice)	BV (Beneficiary Voice)	<i>si</i> -	- <i>an</i>	- <i>ay</i> ; <i>si</i> -; - <i>an</i>
	IV (Instrumental Voice)	<i>si</i> -	- <i>an</i>	- <i>ay</i>

The following examples illustrate the application of these voice forms. For instance, an infix <*em*> is attached to the verb when the sentence is in Agent Voice (AV), see (7). On the other hand, a suffix -*en* is attached to the verb when the sentence is in Patient Voice (PV), see (8). Imperative forms are typically marked by the suffixes -*i* or -*u*, while hortative forms are marked by the suffixes -*aw* or -*ay*.

(7)

Agent Voice (AV):

[<*em*>*an* *ta* *vurati*]_{predicate} [*ti* *pali*]_{subject}
eat<AV> OBL sweet.potato NOM Pali
'Pali eats sweet potatoes.'

(8)

Patient Voice (PV):

[*an-en* *ni* *pali*]_{predicate} [*a* *vurati*]_{subject}
eat-PV GEN Pali NOM sweet.potato
'The sweet potato is eaten by Pali.'

(9)

Locative Voice (LV):

[*a-an-an* *ni* *Pali* *ta* *vurati*]_{predicate}
RED-eat-LV GEN Pali OBL sweet.potato
[*a* *'a'esan*]_{subject}
NOM kitchen
'This kitchen is where Pali eats sweet potatoes.'

(10)

Instrument Voice (IV):

[*si-’an ni Pali ta vurat*]_{predicate}
 IV-eat GEN Pali OBL sweet.potato
 [*a qecap*]_{subject}
 NOM chopsticks
 'Pali eats sweet potatoes with chopsticks.'

These examples demonstrate how different voice forms in Paiwan are used to indicate various syntactic roles and relationships between the agent, patient, location, and instruments or beneficiaries involved in the action.

Paiwan employs case markers to indicate the grammatical relations of nouns within sentences. These markers are categorized into nominative, genitive, and oblique cases, as in Table 2. The nominative (NOM) case typically marks the subject of a sentence, the genitive (GEN) marks possessors or agents in passive constructions, and the oblique (OBL) case often signals objects or locations. The form of the case markers varies depending on whether the noun is a personal noun or a common noun, and within these categories, the markers can further be classified as specific or nonspecific.

Table 2. Paiwan Case Markers

		Nominative	Genitive	Oblique
Personal noun	singular	<i>ti</i>	<i>ni</i>	<i>tjay / tji</i>
	plural	<i>tia</i>	<i>nia</i>	<i>tjia</i>
Common noun	Specific	<i>a</i>	<i>na~nua</i>	<i>ta~tua</i>
	nonspecific	<i>nu</i>	<i>nu</i>	<i>tu</i>

The personal pronoun system in Paiwan includes bound pronouns and free pronouns, as shown in Table 3. Bound pronouns attach to the verb as enclitics and vary based on nominative or genitive cases. Free pronouns stand alone and also vary by case and number.

Table 3. The Personal Pronoun System in Paiwan

		Bound form		Free form		
		Nominative	Genitive	Nominative	Genitive	Oblique
Sg	1st	=a'en (=aken)	'u=	tia'en	nia'en	tjanua'en
	2nd	=sun	su=	tisun	nisun	tjanusun
	3rd	-	-	timadju	nimadju	tjaymadju
Pl	1st Incl	=itjen	tja=	titjen	nitjen	tjanuitjen
	1st Excl	=amen	nia=	tiamen	niamen	tjanuamen
	2nd	=mun	nu=	timun	nimun	tjanumun
	3rd	-	-	tiāmadju	niamadju	tj(a)iamadju

1.3. Causative Constructions in Paiwan

The field of linguistics has been deeply immersed in an ongoing dialogue concerning causative constructions, an intricate linguistic phenomenon that involves the interaction of two fundamental participants: the causer and the causee. In these constructs, the causer triggers the causal event, while the causee undergoes the resulting outcome, thus forming the essential components of causative sentences (Shibatani 14-16). Comrie ("The Grammar of") initially distinguished between causative verbs and their effects, laying the foundation for subsequent analyses, such as Verhagen & Kemmer (68), who further refined the categorization of causative verbs as "causal predicates" and the associated verb forms as "effected predicates," applicable to both transitive and intransitive variations.

Within the context of Paiwan, Chang elucidates three distinct strategies for constructing causative sentences (87). The first strategy involves inherently causative verbs like *veneciq*, signifying 'to slaughter' (i.e., 'to cause [an animal] to die'). The second strategy employs morphological tools, such as *pa'an* (formed by combining the causative prefix *pa-* with the root '*an*'), conveying 'to make eat; to feed'. The third approach encompasses syntactic structures, exemplified by sentence patterns led by words like *papaqadilj*, meaning 'force', combined with other verbs. This study primarily focuses on the second method.

In Paiwan, the causative affixes *pa-Ø*, *pa-ka-*, and *pa-pe-* play a pivotal role in forming causative constructions (cf. Tang 295), as illustrated in (11)-(13) respectively.

(11)

pa-v<in>(e)celaq-en a qipu na qadav
CAUS-crack<PFV>-PV NOM soil GEN sun
'The sun causes the soil to crack.'

(12)

pa-ka-lingdjelj-en=aken ni kama
CAUS-KA-stand-PV=1S.NOM GEN father
'My father will make me stand as punishment.'

(13)

pa-pe-qaca-in=anga 'u=itung ni 'ina
CAUS-PE-big-PV=COS 1S.GEN=clothes GEN mother
'It's time that Mom make my clothes wider!'

In (11), the causative prefix *pa-* is used in combination with the perfective aspect marker *<in>* and the patient voice suffix *-en* to convey the meaning that the sun (the causer) causes the soil (the causee) to crack. The nominative case marker *a* indicates the subject (soil), while the genitive case marker *na* indicates the agent (sun). Example (12) demonstrates the use of the causative prefix *pa-* combined with *ka-* and the patient voice suffix *-en* to indicate that the father (the causer) causes the speaker (the causee) to be punished by standing. The nominative pronominal clitic *=aken* indicates the first person singular subject, while the genitive case marker *ni* indicates the agent (father). Example (13), on the other hand, demonstrates the use of the causative prefix *pa-* combined with the morpheme *pe-* to convey a request for alteration, in which the perfective aspect marker *anga* indicates the completed action, and the genitive pronominal clitic *'u=* indicates the first person singular possessive (my clothes).

This study employs a quantitative perspective to explore the affinities of these affixes with verbs, building on existing research in Paiwan and other languages. We contend that causative constructions using the affix *pa-Ø* are closely associated with direct causation, while those employing the causative affix *pa-ka-* lean towards instances of indirect causation. In

general, direct causation tends to emphasize interactions involving non-human elements more prominently than indirect causation. This quantitative approach allows us not only to investigate the prevalence of the affixes *pa-Ø*, *pa-ka-*, and *pa-pe-* but also to gain fresh insights into their tendencies regarding direct or indirect causation. This study pioneers a data-driven angle, adding a quantitative dimension to the analysis of these causative affixes and their associations with verbs.

The subsequent sections of this paper are organized as follows: Section 2 provides a concise review of relevant literature. Section 3 elaborates on the selected methodologies. Section 4 presents the findings, advocating for a direct/indirect dichotomy and conducting a comparative analysis of causative predicates across Paiwan and other languages. Finally, Section 5 encapsulates the study's main findings and concludes the investigation.

2. Literature Review

2.1 A Model of Causation Types

The architecture of causative constructions often reflects how speakers mentally conceptualize the relationship between a cause and its resulting effect. This facet of language has sparked extensive discourse, spanning both typological and cognitive dimensions. Typologically, causatives often find themselves classified into three distinct forms: (i) lexical causatives, (ii) morphological causatives, and (iii) analytic causatives (Comrie "Language Universals," 166). On the cognitive front, Croft (20) introduced the concept of the Idealized Cognitive Model (ICM), building upon Lakoff's framework. Within Croft's framework, causative constructions depict singular events classified into three primary categories: (i) causative, (ii) inchoative, and (iii) stative (20). It's noteworthy that both Comrie's ("Language Universals," 166) and Croft's taxonomies are conceived as continua, acknowledging that linguistic expressions often fall within the spectrum between adjacent categories (20), rather than neatly fitting into a single one.

In his influential work, Croft visually illustrated the typologies of causation proposed by Talmy ("Semantic causative types," 47, 62; "Force dynamics," 54), as depicted in Figure 1(167). This illustrative framework employs two primary dimensions to delineate four causation categories.

The first dimension differentiates between the initiator and the endpoint within a causative construction. Simultaneously, the second dimension highlights distinctions between animate and inanimate entities, with animates representing the mental realm and inanimates representing the physical realm.

As showcased in Figure 1, the arrows stemming from physical entities—specifically, affective and physical causation—follow a linear and direct trajectory. This underscores the profound direct influence that physical entities wield over other entities. In contrast, arrows originating from mental entities trace a more intricate path. The arrow representing mental-on-mental causation, or inducive causation, takes on a curved trajectory. Furthermore, the arrow corresponding to mental-on-physical causation, identified as volitional causation, displays a subtle bend. This pattern emphasizes that mental entities lack the direct influence over others that characterizes physical entities.

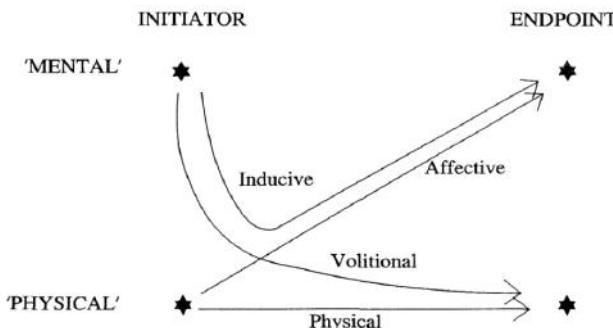


Figure 1. A Model of Causation Types (Croft 167)

The model of causation types has been harnessed in the research conducted by Verhagen & Kemmer to explore causative constructions in modern standard Dutch, employing the verbs *doen* and *laten* (Croft 167, cf. Talmy, "Semantic causative types," 47, 62; "Force dynamics," 54; "Toward a," 414). According to the authors, *laten* is anticipated to convey inducive (mental-on-mental) causation and exhibit a higher prevalence of animate causers compared to inanimate ones, due to its association with indirect causation. Conversely, *doen* is projected to involve more inanimate causers, aligned with its role in direct causation.

Following a similarly refined methodological trajectory, Shih et al.

conducted a logistic regression analysis to delve into the Chinese causative auxiliary verbs *shi* 'cause' and *rang* 'let'. Their outcomes from the regression model have demonstrated the applicability of the theory of direct/indirect causation in comprehending the attributes and lexical meanings of these verbs. The authors posit that the verb *shi* is intrinsically linked to "direct causation," predominantly employed when inanimate participants are involved. In such scenarios, the initiating force leads directly to the resulting state of the causee. In contrast, the verb *rang* is associated with "indirect causation," commonly used when animate participants are engaged, and an additional force beyond that of the causer contributes to the causal event.

2.2 Definition of Transitivity

Transitivity is a core grammatical concept that refers to the relationship between a verb and its arguments, particularly how the verb interacts with its object(s). Linguists typically explore transitivity from two primary perspectives: the syntactic view and the functional (semantic) view. These perspectives offer different criteria for defining and analyzing transitivity, which impacts how linguistic data, including causative constructions, are interpreted.

In formal syntactic theories, Chomsky's generative framework defines transitivity as the relationship between a verb and its internal argument, where transitive verbs require a complement (Chomsky 45). Radford expands on this idea by illustrating the VP structure that hosts direct objects for transitive verbs (Radford 123). Similarly, Carnie emphasizes that the projection of arguments determines the syntactic complexity of transitive versus intransitive verbs (Carnie 89).

In functional view, on the other hand, valency, a key aspect of transitivity, is discussed by Tesnière, who views it as the number of arguments a verb can take, reflecting its functional role (Tesnière 34). Dixon analyzes transitivity as a function of valency, observing how verbs are classified based on the number of participants involved (Dixon 112). Comrie provides a cross-linguistic perspective, showing that valency patterns vary widely across languages (Comrie "Language Universals," 78).

This study will adopt a semantic (functional) view of transitivity in the annotation scheme of our dataset. There are several reasons. First, Paiwan

causative constructions often exhibit complex relationships between the verb and its arguments that cannot be fully captured by a purely syntactic analysis. By focusing on the semantic roles of the causer and causee and examining how verb valency interacts with causative markers, this approach provides a more accurate representation of how transitivity operates in Paiwan.

Moreover, adopting a semantic view allows for meaningful cross-linguistic comparisons with other studies of causation, as this view parallels previous research in cognitive linguistics and linguistic typology, which often treats transitivity as a gradient rather than a strict binary (Croft; Hopper and Thompson). While a syntactic analysis could offer insights into the structural patterns of transitivity, the semantic approach offers greater flexibility in analyzing causative constructions in Paiwan. It is particularly useful in understanding the interaction between meaning, argument structure, and causative morphology.

3. Research Methods

To comprehensively explore the multifaceted contexts in which the three causative affixes operate, we carefully curated a Paiwan dataset. The dataset was assembled from a variety of sources, including dictionaries (e.g. Ferrell), textbooks (e.g. Chang, Hsieh et al., among others), example sentences from prior studies (e.g. Ho, Early & Whitehorn, Huang, Li, among others), Bible passages, and the authors' own field notes. The inclusion of Bible translations is justified by their accessibility and the structured linguistic data they provide, particularly for an endangered and under-documented language like Paiwan. Although these texts may not fully reflect contemporary spoken Paiwan, they offer a valuable source of consistent grammatical structures that are essential for the statistical analysis of causative constructions. To mitigate any limitations, the Bible data were supplemented with spontaneous speech and field-collected examples, ensuring a balanced and comprehensive corpus for analysis.

We collected a total of 10,012 Paiwan sentences containing the causative prefixes *pa-Ø*, *pa-ka-*, and *pa-pe-*. Of these, 9,185 sentences feature the prefix *pa-Ø*, 560 sentences contain *pa-ka-*, and 267 sentences include *pa-pe-*. The dataset was systematically categorized into three distinct groups: *pa-Ø*, *pa-ka-*, and *pa-pe-*. From each category, a random sample of 220 items was selected for in-depth analysis. After a screening

process to exclude sentences with ambiguous causer-causee relationships or those that did not convey a clear causative meaning, we retained a total of 566 instances, which formed the basis for subsequent annotation.¹

The initial annotation phase involved the detailed determination of whether the causer and causee within each data instance could be classified as either mental or non-mental entities.² When the causer, often a human or a human-operated institution, exhibited the ability to consciously initiate the causing event, it met the criteria for being a mental causer. Conversely, an inanimate causer was designated as non-mental. Similarly, a mental causee was identified when it underwent the caused event spontaneously; otherwise, it was labeled as non-mental.

The distinguishing attributes of the causative affixes were extracted through a meticulous analysis of the causers and causees present in causative constructions. Instances featuring both a mental causer and a mental causee were categorized as “inducive,” as illustrated in (14), repeated from (12).

(14)

pa-ka-lingdjelj-en=aken	ni	kama
CAUS-KA-stand-PV=1S.NOM	GEN	father
'My father will make me stand as punishment.'		
(lit.) 'My father will cause me to stand as punishment.'		

¹ It is noteworthy to mention that this paper does not take dialectal variation into consideration. We acknowledge that there are distinct dialects within the Paiwan language, each with variations in voice marking and the pronominal system. However, based on our data and previous studies, the semantics of causer and causee remain relatively consistent across these dialects. Thus, while some morphological or syntactic differences may exist, they do not significantly impact the semantic interpretation of causative constructions as analyzed in our study.

² For consistency with previous studies that emphasize cognitive and pragmatic factors in causative constructions (e.g., Verhagen & Kemmer), we employ a mental vs. non-mental distinction in this study. Nevertheless, we recognize the broader relevance of the animate vs. inanimate hierarchy in linguistic typology. We appreciate the anonymous reviewer for highlighting this potential perspective, and we will leave incorporating distinctions of animacy and more nuanced verb categories for future research directions.

In this example, the causer is *kama* 'father' and the causee is the nominative first person singular clitic *aken*, both qualifying as mental entities. The causer holds the capability to directly influence the causee, with the agency to exert this influence of their own volition. Similarly, as depicted in (15), the category of "volitional" causation emerges when the construction involves a mental causer and a non-mental causee.

(15)

<i>tja=kuda-in nu pa-pe-liaw</i>	1PL.INCL.GEN=do.what-PV CONJ CAUS-PE-much
<i>a paysu</i>	NOM money
'How can we earn more money?'	
(lit.) 'If we want to cause money to become more, what should we do?'	
	(Hsieh et al. 230)

Here, the causer is *tja* 'we', and the causee is *paysu* 'money'. This causative construction features a mental causer exerting influence on a non-mental causee. If the construction entails a non-mental causer and a mental causee, it falls into the category of "affective," as demonstrated in (16).

(16)

<i>pa-pe-saqetju=aravac</i>	<i>a valan</i>	<i>ni pali</i>
CAUS-PE-hurt=very	NOM words	GEN Pali
<i>tjanuitjen</i>		
1PL.INCL.OBL		

'Pali's words hurt us very much.'

(lit.) 'Pali's words cause us to hurt very much.'

In this instance, the non-mental causer *valan ni pali* 'Pali's words' influences the mental causee *tjanuitjen* 'us'. The non-mental causer does not engage with the causee through voluntary action; however, the causee itself becomes influenced. Lastly, "physical" causation is identified when both the causer and the causee are non-mental entities, exemplified in (17), reproduced from (11).

(17)

<i>pa-v<in>(e)celaq-en</i>	<i>a qipu na qadaw</i>
CAUS-crack<PFV>-PV	NOM soil GEN su
'The sun causes the soil to crack.'	

In (17), both the causer and causee are non-mental entities. This scenario portrays an indirect action, where an inanimate causer triggers a reaction in another inanimate causee.

After capturing these attributes, we ascertain the valency-based transitivity of verbs following the causative affixes. As mentioned previously, we adopt a semantic view of transitivity because it enables us to capture the richness of Paiwan causative constructions, particularly how causative markers interact with verb valency and argument structure. This functional approach aligns with broader typological studies, allowing for a more nuanced understanding of how transitivity and causativity are expressed in Paiwan.

We classify the verb, which acts as the “effected predicate” (Verhagen & Kemmer 68), as intransitive (INTR) if it semantically functions as a monovalent verb, or as transitive (TR) if it exhibits a bivalent or higher valency.

A snapshot of our annotation scheme is given in Figure 2.

Paiwan	Chinese	Affix	causer	causee	Trans	Type
pavincelaqen a qipu na qadav.	太陽使土地乾裂。	pa	0	0	INTR ▾	physical
pakalingdjelen aken ni kama.	父親要我罰站。	paka	1	1	INTR ▾	inductive
papeqacain anga u itung ni ina.	媽媽該把我的衣服改的更寬一點了！	pape	1	0	INTR ▾	volitional
tja kudain nu papeliaw a paysu?	如何累積更多錢財？(如果要使錢變多，我們要做什麼？)	pape	1	0	INTR ▾	volitional
papesaqetju aravac a vanan ni pali tjanuitjen.	Pali 這句話使我們很受傷。	pape	0	1	INTR ▾	affective

Figure 2. A Snapshot of the Annotation Scheme

The dataset resulting from this process was then stored in a JSON file, and an illustrative example is provided in Figure 3.

```
{
  "Paiwan": "tja kudain nu papeliaw a paysu?",
  "Chinese": "如何累積更多錢財？(如果要使錢變多，我們要做什麼？",
  "Affix": "pape",
  "Trans": "INTR",
  "Type": "volitional"
}
```

Figure 3. An Example of the Annotated Sentences

The annotated dataset is then employed to train a logistic regression model, following the methodologies outlined by Levshina (chap. 12-13). The selection of this model is grounded in its suitability for modeling binary dependent variables. The statistical outcomes produced by the logistic regression model will be thoroughly analyzed to facilitate the exploration of affix selection among *pa-Ø*-, *pa-ka*-, and *pa-pe*-.

4. Results

4.1. Evaluation

The outcomes produced by the logistic regression model are summarized in Table 4, displaying the overall performance of the logistic regression model used to analyze the selection of causative affixes (*pa-Ø*-, *pa-ka*-, and *pa-pe*-) in Paiwan.

Table 4. The Overall Performance of the Regression Model

##		Model	Likelihood	Discrimination	Rank	Discrim.
##			Ratio Test	Indexes		Indexes
## Obs	566	LR chi2	61.17	R2 0.115	C 0.647	
## paka	202	d.f.	4	R2(4,566)0.096	Dxy 0.293	
## pape	166	Pr(> chi2)	<0.0001	R2(4,501.8)0.108	gamma 0.364	
## pa	198			Brier 0.218	tau-a 0.195	
## max deriv	2e-11					

The table summarizes key statistical metrics, including the number of observations, the significance of the model, and the predictive accuracy. The first column provides the total number of observations analyzed in the model. The second column presents the Likelihood Ratio Test (LRT) statistic, which assesses the overall significance of the model. A significant p-value (< 0.0001) indicates that the model includes at least one significant predictor for affix selection. The final column contains the concordance index (C), which measures the model's ability to correctly predict the use of the causative affixes based on the input variables. A concordance score of 0.647 means that the model accurately predicts affix selection 64.7% of the time.

As shown in Table 4, the model is statistically significant ($p < 0.0001$), indicating that the variables included in the regression, such as causation type and transitivity, have a predictive value for determining the causative

affix. However, with a concordance index of 0.647, the model demonstrates moderate predictive accuracy, which suggests room for refinement in the variables or the model structure. While the model performs acceptably according to Hosmer & Lemeshow's scale in Table 5 below, the C-statistic below 0.7 suggests that the model's ability to discriminate between affix choices is not optimal. This might be due to the complexity of causative constructions in Paiwan or an insufficient distinction between direct and indirect causation in some cases.

Table 5. A Scale for the Index C (Hosmer & Lemeshow 162)

$C = 0.5$	no discrimination
$0.7 \leq C < 0.8$	acceptable discrimination
$0.8 \leq C < 0.9$	excellent discrimination
$C \geq 0.9$	outstanding discrimination

The coefficient values are presented in Table 6, representing the estimated log odds of the outcome when all variables align with their reference levels—corresponding to *pa-Ø*, volitional causation, and intransitive effected predicates.

Table 6. The Coefficient Values

## Coefficients :	Estimate	Std. Error	z-value	Pr(> z)
## (Intercept):paka	-0.14720	0.22758	-0.6468	0.517748
## (Intercept):pape	0.95644	0.21124	4.5277	5.963e-06 ***
## Typeaffective:paka	-1.07295	0.60083	-1.7858	0.074135 .
## Typeaffective:pape	-18.99558	2404.12367	-0.0079	0.993696
## Typephysical:paka	-0.73022	0.42812	-1.7056	0.088079 .
## Typephysical:pape	-1.03827	0.36847	-2.8177	0.004836 **
## Typeinductive:paka	1.09792	0.23711	4.6305	3.649e-06 ***
## Typeinductive:pape	-0.33814	0.26356	-1.2830	0.199495
## TranSTR:paka	-0.55145	0.22834	-2.4150	0.015733 *
## TranSTR:pape	-2.68911	0.31860	-8.4405	< 2.2e-16 ***
## ---				

Larger coefficients indicate an increased likelihood of the specified variable and reduced likelihood of *pa-Ø*, while smaller coefficients signify diminished odds of the specified variable and increased odds of *pa-Ø*. In

terms of causation types predictor, “volitional” serves as the reference level. The number of stars appended on the right indicates the statistical significance level of the result. Notably, only “Typeinductive:paka” displays positive coefficients, indicating that inductive causation reduces the odds of *pa-Ø*- and elevates the likelihood of *pa-ka-* relative to volitional causation. Remarkably, physical causation exhibits statistically significant negative estimates, signifying a strong preference for *pa-Ø*-. This indicates a strong inclination towards selecting *pa-Ø*- over the other two affixes. Regarding the type of effected predicates, transitive effected predicates exhibit a noticeable aversion to *pa-pe-* compared to their intransitive counterparts.

These observations align with the direct/indirect differentiation proposed by Verhagen & Kemmer. As *pa-Ø*- is associated with “direct causation,” it is typically employed when the causing event involves inanimate participants. In such cases, the force initiated by the cause directly leads to the resulting state of the causee. This explains why physical causation, involving both non-mental causer and non-mental causee, significantly favors the usage of *pa-Ø*- over the other affixes.

Conversely, *pa-ka-*, associated with “indirect causation,” tends to be used when both animate participants are involved, and an additional force beyond the causer contributes primarily to the caused event. This clarifies why inductive causation, involving both mental causer and mental causee, exhibits a strong preference for selecting *pa-ka-* over the other affixes.

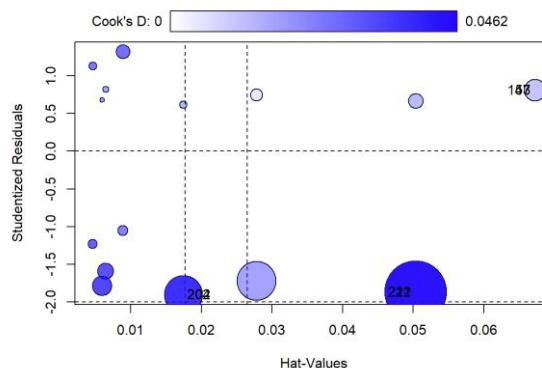


Figure 4. A Plot with Outliers and Discrepancy Values

Figure 4 visually represents outliers and discrepancy values within our dataset, indicating that a few observations exhibit significant discrepancies and notable Cook's distance values, scattered around the plot's periphery. Some outliers are highlighted in Table 7.

Table 7. Some Outliers in the Dataset

Affix	Type	Trans
pa-∅-	affective	TR
pa-∅-	affective	TR
pa-ka-	physical	INTR
pa-ka-	physical	INTR
pa-ka-	affective	INTR
pa-ka-	affective	INTR

Table 7 showcases instances that deviate from the typical usage of *pa-∅-* and *pa-ka-*. As mentioned earlier, *pa-∅-* is usually associated with physical causation rather than affective causation, while *pa-ka-* is typically related to inducive causation rather than physical or affective causation. This observation underscores the possibility that our assembled dataset might be overly generalized, potentially lacking the nuanced granularity needed to capture subtle conceptual distinctions, a common challenge in corpus-based semantic research.

Finally, during the validation of model performance, tests were conducted to assess the risk of overfitting, which occurs when a model performs well on the training data but fails to generalize to new, unseen data. The approach employed in this study involved bootstrapping (cf. Levshina, chap. 12), wherein the model was refitted 200 times. The results of this validation process are presented in Table 8.

Table 8. The Results of Testing for Overfitting

##	index.orig	training	test	optimism	index.corrected	n
## Dxy	0.2932	0.2944	0.2869	0.0075	0.2857	200
## R2	0.1154	0.1229	0.1091	0.0138	0.1015	200
## Intercept	0.0000	0.0000	0.0297	-0.0297	0.0297	200
## Slope	1.0000	1.0000	0.9513	0.0487	0.9513	200
## Emax	0.0000	0.0000	0.0161	0.0161	0.0161	200
## D	0.1063	0.1141	0.1001	0.0140	0.0923	200
## U	-0.0035	-0.0035	-0.8245	0.8210	-0.8245	200
## Q	0.1098	0.1177	0.9246	-0.8069	0.9168	200
## B	0.2183	0.2173	0.2198	-0.0024	0.2207	200
## g	0.7096	0.7311	0.6808	0.0503	0.6593	200
## gp	0.1489	0.1492	0.1415	0.0077	0.1413	200

To assess the extent of overfitting in the current model, Table 8 presents several metrics, including optimism scores, the Dxy statistic, and the R² value, all of which provide insights into the model's performance and reliability.

The optimism scores indicate the degree of overfitting by measuring how much the model's performance deteriorates when evaluated on new samples compared to its performance on the training data. Higher optimism scores suggest a greater risk of overfitting. In Table 8, the "Optimism" column shows that the optimism values for each parameter (e.g., Intercept, Slope) remain relatively low. For instance, the optimism score for the "Slope" is 0.0487, indicating only a slight reduction in model accuracy when applied to new data. This low optimism value suggests that the model is not heavily overfitted and can be considered reasonably robust.

The Dxy statistic is another indicator of model performance and is closely related to the concordance index (C). The Dxy statistic measures the rank correlation between predicted and observed responses, with values ranging from -1 (perfect discordance) to 1 (perfect concordance). A higher Dxy value indicates better predictive performance. In this study, the Dxy statistic presented in Table 8 falls within an acceptable range, suggesting that the model's predictions are aligned with the observed outcomes in a consistent manner. This supports the validity of the model's predictions regarding causative marker selection in Paiwan.

The R^2 value reflects the proportion of variance in the dependent variable that is explained by the independent variables in the model. In this context, a higher R^2 indicates that a greater proportion of variation in causative marker selection is captured by the predictors, such as causation type and verb transitivity. The relatively high R^2 values reported in Table 8 indicate that the model has a good fit, accounting for a significant portion of variability in the data.

Additionally, Table 8 includes bootstrap validation results, which provide a more nuanced assessment of model stability and generalizability. The bootstrap validation was performed by refitting the model 200 times with different random samples, and the reported “Optimism” values indicate the average decrease in model performance across these iterations. Since the optimism values remain relatively low, it suggests that the model’s performance does not vary significantly with different sample subsets, enhancing the reliability of the regression estimates.

Overall, the results in Table 8 demonstrate that the model is not overly optimistic in its predictions, with minimal evidence of overfitting. This suggests that the estimates of the regression coefficients are reliable and can be considered trustworthy. The low optimism scores, acceptable Dxy statistic, and robust R^2 values collectively indicate that the logistic regression model performs well in predicting the choice of causative markers in Paiwan, supporting the study’s claims regarding the relationship between causation type and affix selection.

4.2. A Cross-linguistic Comparison

This subsection conducts a comparative analysis that juxtaposes our findings with research conducted by Levshina (chap. 12-13) on the causative verbs *doen* and *laten* in modern Dutch, as well as the study by Shih et al. on the causative verbs *shi* and *rang* in Mandarin Chinese.

Mandarin and Dutch were selected for cross-linguistic comparison with Paiwan due to their typological diversity and the distinct ways these languages encode causation. Mandarin, a Sino-Tibetan language, predominantly uses lexical causative verbs such as *shi* 使 ‘cause’ and *rang* 讓 ‘let’, while Dutch, an Indo-European language, relies more on analytic causatives, employing the verbs *doen* ‘make’ and *laten* ‘let’. These languages offer a contrast to Paiwan, which utilizes **morphological causatives**. By comparing languages from different families and typological

systems, this study aims to highlight both universal and language-specific patterns of causative construction.

Figure 5, 6, and 7 illustrate the relationship between the transitivity of verbs and the selection of causative verbs/affixes in Paiwan, Chinese, and Dutch, respectively. The figures present how frequently each verb/affix is selected in both transitive and intransitive contexts.

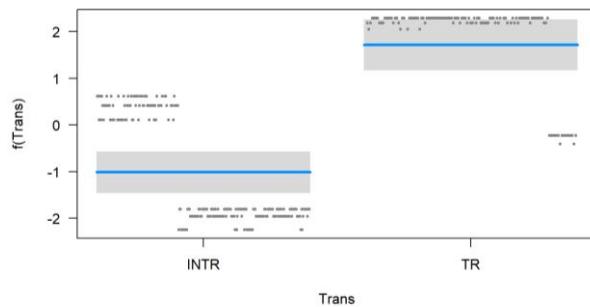


Figure 5. Relation between Transitivity and Selection of Affix in Paiwan

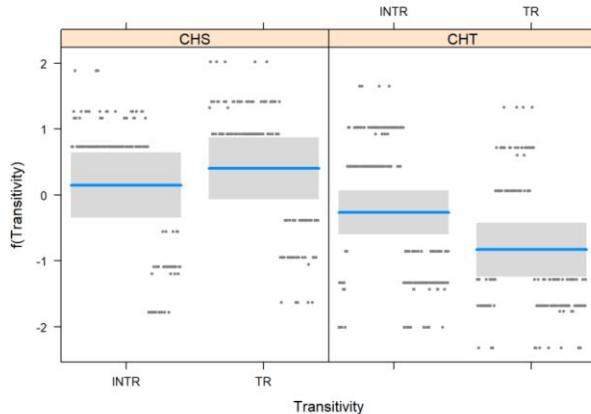


Figure 6. Relation between Transitivity and Selection of Verb in Chinese

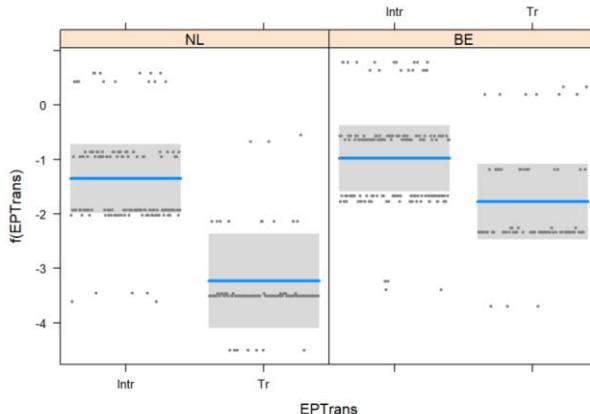


Figure 7. Relation between Transitivity and Selection of Verb in Dutch

In these figures, the x-axis represents the transitivity of the verb (transitive vs. intransitive), while the y-axis indicates the frequency of the two specified causative affix/verb in the dataset. In Figure 5, the specified affixes are *pa-Ø-* vs. *pa-pe-*. The higher the horizontal bar is, the more frequently the affix *pa-Ø-* will be used, and less likely the affix *pa-pe-* will be used. And vice versa, the lower the horizontal bar is, the more frequently the affix *pa-pe-* will be used, and less likely the affix *pa-Ø-* will be used. In Figure 6, the higher the bar is, the more frequently the verb *shi* will be used, and less likely the verb *rang* will be used, and vice versa. In Figure 7, the higher the bar is, the more frequently the verb *doen* will be used, and less likely the verb *laten* will be used, and vice versa.

At the outset, it becomes evident that the behavior of the three languages diverges significantly with regard to the transitivity of the matrix verb. In Paiwan, an absence of pronounced preference for either direct or indirect causation is observed. However, transitivity plays a pivotal role in determining the choice of affix. Specifically, Figure 5 shows that Paiwan speakers tend to favor *pa-pe-* when the effected predicate is intransitive, as indicated by the bar on the left, while opting for *pa-Ø-* when the effected predicate is transitive, as indicated by the bar on the right.

In Chinese, the Taiwan Mandarin variety, represented as CHT, exhibits a tendency to favor *rang*, indicative of indirect causation, while the Mainland Mandarin variety, indicated by CHS, inclines towards the use of

shi, representing direct causation. However, Shih et al. unearth an intriguing contrast in terms of transitivity (173). Taiwan Mandarin speakers are more likely to use *rang* when the matrix verb is transitive, whereas Mainland Mandarin speakers are more predisposed to selecting *shih* in such scenarios.

In Dutch, the indirect variant *laten* is more commonly employed than the direct variant *doen* in both dialects. This phenomenon has led many scholars to designate *laten* as the default form of causative constructions in Dutch (cf. Speelman & Geeraerts, Lenshina et al., Geeraerts). Furthermore, both dialects share a transitivity pattern, where the probability of opting for *laten* is notably higher when the main verb is transitive.

The second distinction among these three languages pertains to causation types. The interplay between the Causation Types variable and the selection of causative verbs/affixes in Paiwan, Chinese, and Dutch is visually represented in Figure 8, 9, and 10, respectively.

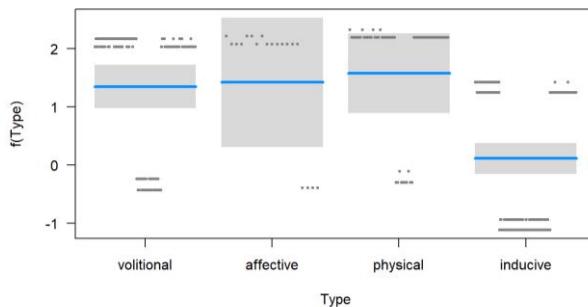


Figure 8. Relation between Causation Type and Selection of Affix in
Paiwan

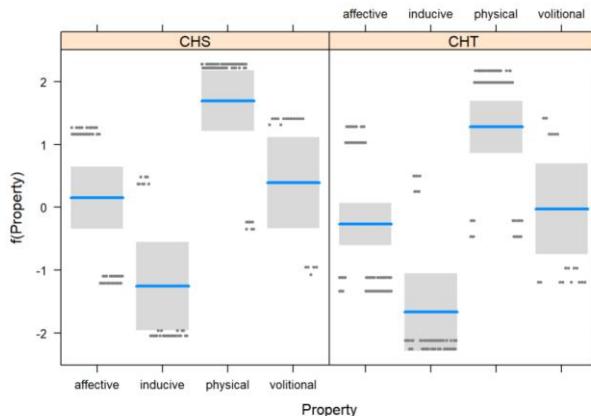


Figure 9. Relation between Causation Type and Selection of Verb in Chinese

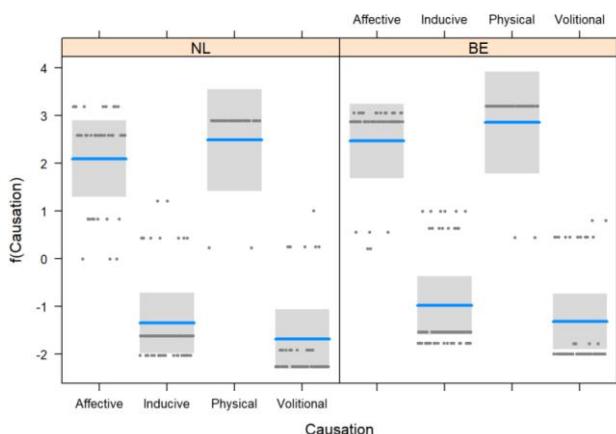


Figure 10. Relation between Causation Type and Selection of Verb in Dutch

In Figure 8, the specified affixes are *pa-Ø*- vs. *pa-ka-*. The higher the bar is, the more frequently the affix *pa-Ø*- will be used, and less likely the affix *pa-ka-* will be used, and vice versa. In Figure 9, the higher the bar is, the more frequently the verb *shi* will be used, and less likely the verb *rang* will be used, and vice versa. In Figure 10, the higher the bar is, the more

frequently the verb *doen* will be used, and less likely the verb *laten* will be used, and vice versa.

We can see from Figure 8 that Paiwan significantly diverges from the other two languages. In Paiwan, inductive causation is inclined towards the use of *pa-ka-*, indicating indirect causation, as indicated by the right-most bar in the figure, while the other three causation types exhibit a stronger tendency towards the remaining two causative affixes. However, the differences among these three causation types are subtle.

For Chinese, physical causation aligns with *shi*, while inductive causation leans towards *rang*. However, neither affective nor volitional causation displays a distinct preference. Furthermore, no significant divergence is observed between the two Chinese dialects in this context.

In Dutch, affective and physical causation demonstrate a propensity for *doen*, while inductive and volitional causation exhibit a preference for *laten*. No conspicuous dialectal distinction is discernible within this context.

5. Limitations and Future Directions

While this study offers valuable insights into the causative constructions in Paiwan, several limitations warrant acknowledgment. These limitations do not detract from the core findings but highlight areas for future refinement and exploration.

A significant limitation of this study lies in the challenges associated with verb classes and transitivity types. Paiwan verbs exhibit complex valency patterns that influence how causative affixes are employed. For instance, the interaction between verb subcategorization and semantic roles of causer and causee complicates the direct/indirect causation framework proposed here. While adopting a functional (semantic) approach to transitivity provides a practical means of capturing general trends, this choice may oversimplify nuanced distinctions inherent to Paiwan's verbal morphology. These complexities may also affect how well the direct/indirect dichotomy applies across verb classes, especially given the gradient nature of transitivity in causative constructions. Future research could benefit from a more detailed examination of verb subcategorization, potentially incorporating a syntactic perspective to complement the semantic approach utilized here.

Another limitation stems from the inability to restrict the dataset to a single, well-defined Paiwan dialect. This study combines data from various sources representing multiple dialects, each exhibiting subtle morphological and syntactic differences. While this approach ensures a broad representation of causative constructions, it introduces variability that may obscure dialect-specific patterns in affix usage. For example, differences in voice marking and pronominal systems across dialects could influence the frequency or contextual applicability of causative affixes. Although the study assumes a degree of consistency in the semantic interpretation of causative markers, future research focusing on individual dialects could uncover more localized patterns and refine our understanding of how causative constructions operate within specific linguistic contexts.

Addressing these limitations presents several avenues for future work. Incorporating a more granular analysis of verb classes and subcategorization could provide deeper insights into how verb-specific properties influence affix selection. Additionally, building corpora for individual Paiwan dialects, while resource-intensive, would enable the identification of dialect-specific trends and enrich the typological analysis of causative constructions. By addressing these areas, future studies can build on the foundation laid by this research, advancing our knowledge of Paiwan causative constructions and their place in linguistic typology.

6. Conclusion

In summary, this study contributes to our understanding of Paiwan causative constructions by providing a quantitative analysis of direct and indirect causation, as well as the distribution of causative markers across different verb classes. While these contrasts have been previously described in the literature, this study offers new empirical evidence and a statistical perspective that enrich our comprehension of how these constructions operate in Paiwan.

Through a comprehensive analysis using logistic regression, focusing on the three Paiwan causative affixes *pa-Ø-*, *pa-ka-*, and *pa-pe-*, this research provides further insights into the usage patterns of these affixes, offering additional evidence to support the existing body of work on Paiwan causatives. The findings support the theory of direct/indirect

causation, providing a robust framework for comprehending the distinct features and lexical implications associated with these affixes.

To elaborate, we propose that the affix *pa-Ø* is closely linked with the concept of “direct causation.” It is predominantly used when the causative event involves inanimate participants, where the cause directly leads to the resulting state of the causee. In contrast, the affix *pa-ka-* is better categorized as representing “indirect causation,” as it is frequently applied in contexts involving animate participants, often with an additional force contributing to the causal event. Notably, the affix *pa-pe-* occupies an intermediary position, showing a preference for intransitive effected predicates.

The significance of unraveling the intricate dynamics between causers and causees within causative constructions goes beyond linguistic analysis. It has implications for natural language processing tasks and corpus linguistics studies, where such understanding plays a pivotal role. By shedding light on the distinct usages of these causative affixes, this research, along with its accompanying annotated dataset, has the potential to enhance performance in a range of related tasks.

In conclusion, the study shows that the selection of causative affixes in Paiwan is influenced by contextual factors, such as verb transitivity and the type of causation (direct or indirect). While broader cognitive or pragmatic influences may also play a role, these aspects were not directly examined in the current analysis and would require further research to confirm. Additionally, the cross-linguistic comparison with Dutch and Mandarin highlights typological differences and provides a basis for further exploration of causative constructions in other languages. This study builds on existing research, offering a more comprehensive perspective on the usage patterns of causative affixes in Paiwan, while leaving room for future investigations.

Abbreviations

AV	Agent Voice
BV	Beneficiary Voice
CAUS	Causative
CONJ	Conjunction
COS	Change of State
GEN	Genitive
IMP	Imperative
INCL	Inclusive
IRR	Irrealis
IV	Instrumental Voice
LNK	Linker
LV	Locative Voice
NEG	Negation
NOM	Nominative
OBL	Oblique
PFV	Perfective
PL	Plural
PV	Patient Voice
RED	Reduplication
RV	Referential Voice
S	Singular

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Address for correspondence

Mao-Chang Ku
Institute of Linguistics,
National Taiwan University
No. 1, Sec. 4, Roosevelt Rd.,
Taipei City 106, Taiwan (R.O.C)

d08142002@ntu.edu.tw

Milingan Chia-Hao Tai
Institute of Linguistics,
National Tsing Hua University
No. 101, Section 2, Kuang-Fu Rd.,
Hsinchu 300044, Taiwan (R.O.C)

milingan22@gmail.com

Shu-Kai Hsieh
Institute of Linguistics,
National Taiwan University
No. 1, Sec. 4, Roosevelt Rd.,
Taipei City 106, Taiwan (R.O.C)

shukaihsieh@ntu.edu.tw

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語境與語言限制對擬聲詞「Click」和 「Knock」的語音與知覺影響

Kevin Samejon*

波士頓大學

摘要

儘管擬聲詞在不同語言中普遍存在，其本質仍未得到充分認識。這可能是由於對同一聲音的表現或模仿程度不同，結果往往顯得隨機。然而，跨語言研究證據顯示，在特定語境中，某些音段在表現聲音象徵詞義方面具有一定的一致性。基於這些觀察，本研究探討了宿霧語中「Click」和「Knock」擬聲詞的生成與知覺（ $n=38$ 位宿霧語母語者）。通過宿霧語的聲學語音分析以及宿霧語和西班牙語的知覺測試，我們的結果顯示跨語言和語言特定的限制結合起來，影響了宿霧語使用者對「Click」和「Knock」擬聲詞的發音與知覺。特別是，擬聲詞的形成和常規化可能促成了受觀察的語言形成特定的模式。

關鍵詞：擬聲詞、宿霧語、西班牙語、言語生成與知覺

* 波士頓大學語言學系博士畢業生

Phonetic and Perceptual Consequences of Context and Linguistic Constraints in *Click and Knock* Onomatopoeias

Kevin Samejon*

Boston University

Abstract**

The nature of onomatopoeias is still not adequately understood, despite their crosslinguistic presence. This may be due to the varying degrees of representations or imitations of the same sound, which often appear arbitrary. However, crosslinguistic evidence suggests that certain sound segments exhibit some consistency in representing sound symbolic word meanings within particular contexts. With these observations in mind, the present study explored the production and perception of click and knock onomatopoeias in Cebuano (n=38 native Cebuano speakers). Using acoustic phonetic analysis in Cebuano and perceptual tests in Cebuano and Spanish, our results suggest a combination of crosslinguistic and language-specific constraints that influence Cebuano speakers' production and perception of click and knock onomatopoeias. In particular, onomatopoeic word formation and conventionalization may have contributed to the language-specific patterns observed.

Keywords: onomatopoeia, Cebuano, Spanish, speech production and perception

* PhD Graduate of Department of Linguistics, Boston University

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1. Introduction

Sound symbolism refers to the less arbitrary relationship of sound and meaning in human languages, and one class of words that exemplifies this notion is onomatopoeia (cf. Saussure 1959). Onomatopoeic words are sound symbolic imitations that map the acoustics of extralinguistic sound sources to the spoken human language. Being part of human language, onomatopoeias exhibit language-specific constraints, especially along the lines of their phonemic structure (Nuckolls 1999; Güldemann 2008; Körtvélyessy 2020), but the same structure on the phonetic level is hardly ever considered (but see Assaneo et al. 2011). Building on our understanding of the imitative nature of onomatopoeias and observed language constraints, we examine how different imitation contexts and linguistic factors influence the production and perception of the crosslinguistically attested click and knock onomatopoeias.

Our starting point is the widely observed phenomenon in sound symbolism where the production of certain extralinguistic sounds are associated to specific contexts, e.g., size, shape, texture, intensity, or category (Sapir 1929; Köhler 1970; Perlman et al. 2015). The production of the extralinguistic sounds may also be gradient relative to the degree by which they fit these associations (Shinohara & Kawahara 2010; Kawahara & Braver 2014). Along these lines, we hypothesize that the production of onomatopoeias will also vary based on the given intensity or size of the sound source they imitate, i.e., imitation context, and will be expressed via fine-grained phonetic changes. Not only that these fine-grained phonetic changes will likely conform to the relevant imitation contexts, but we also hypothesize that fine-grained phonetic changes will follow certain linguistic constraints found in the language in question (cf. Braver et al. 2016). In terms of perception, we hypothesize that listeners will be able to associate changes in the phonetic segments they hear to specific sound sources of relevant onomatopoeias crosslinguistically.

The rest of the paper is structured as follows. Section 2 situates our current investigation in the contextual and linguistic parameters through which onomatopoeias are expressed in human language and followed by the structure of click and knock. Moreover, Section 2 contains description of the present study and the research questions that drive our experimental efforts. Section 3 and Section 4 describe the methods and report the results of two experiments in this study, i.e., a production task.

(Experiment 1) and a listening-perception task (Experiment 2), respectively. Section 5 presents the general discussion of the studies' findings. Section 5 also revisits the role of context and linguistic constraints in the production and perception of onomatopoeias. Finally, Section 6 provides the conclusion of the present study.

2. Background

2.1. Context and Constraints

The production of onomatopoeias fundamentally involves imitating extralinguistic sounds into a communicable form within human language. What this means is that the imitation is “reshaped to fit the sound pattern of the imitator’s language” and the preciseness of linguistic imitation is a function of the sound system of a language (Hockett 267). Linguistically, the imitation of the acoustic qualities of extralinguistic sounds is translated into combinations of phonemes within the language, facilitating a close correspondence between sound and meaning (Childs 2015; Johansson et al. 2020; Kwon & Round 2015). Onomatopoeias are categorized under the broader term of sound symbolism due to this inherent correlation between sound and meaning.

A recent volume by Körtvélyessy & Štekauer (2024) has shown that phonemes in onomatopoeias carry a degree of meaning with crosslinguistic patterns. Certain phonemes are more commonly used across languages depending on the supposed sound source they represent. For instance, (voiced) plosive onsets are often associated with sounds like drums, bells, and thunder, while fricative onsets encompass sounds such as wind, snakes, and laughter. Moreover, /u/ is associated with sounds like splash, storm/thunder, and heartbeat, while /i/ and /u/ alternate for sounds like that of a fly or mosquito, with /i/ more frequently associated with sounds like snakes and chiming bells. In contrast to onsets, codas in many onomatopoeias are typically voiceless or nasal sounds.

The function of phonemic representationss, as demonstrated by Körtvélyessy & Štekauer (2024), extends to expressing specific sensory meanings (Jespersen 1933; Ramachandran & Hubbard 2001; Winter et al. 2017). For instance, across many languages, diminutive expressions conveying concepts like physical smallness or quickness often feature high.

front vowels, whereas expressions denoting largeness and related concepts tend to use low back vowels (Ohala 1994; Nuckolls 1999; Haynie et al. 2014). The use of a particular phoneme presupposes that it is part of the language's phoneme inventory (Lavoie 2002).

The association between phonemes and the imitated sounds appears to still adhere to linguistic constraints. The representation of phones that make up the syllable structure of imitated sounds are optimized to approximate extralinguistic sounds. These linguistic constraints may stem from the phonotactics of a language, which refers to the preferred order or combinations of phonemes. For example, in English, *blip* is common and preferred over *lip* (Berent 2008), but it will be less common and preferred in Japanese to have such consonant clusters. Moreover, Northern Amis, an Austronesian language in Taiwan (Bril 2024), allows the velar nasal /ŋ/ word-initially and word-finally *ngang* “sound of a sudden noise” but only word-finally in English, *bang* vis-à-vis *ngba*, reflecting the constraints in preferred phoneme sequences across languages.

Körtvélyessy (2020) exemplified this further through comparisons of dog barks: in English, *arf-arf*, French *ouaoua*, and Slovak *hav-hav*. Each language uses different phoneme combinations to represent the sound of a dog bark, demonstrating that certain combinations may better capture the essence of a sound in one language compared to another. Thus, some combinations will vary across languages due to these linguistic preferences and constraints.

The production of onomatopoeias on the phonetic level, however, is not widely explored although context and linguistic constraints seem to affect the realization of onomatopoeias. Gleaning from the phonetic literature, we can expect crosslinguistic tendencies on how languages behave in terms of their phonetic perturbation, e.g., the degree to which vowel quality and duration are changed, especially in expressive contexts. Take the changes in phonetic duration in emphatic contexts as an example. While there is a crosslinguistic preference for a binary short-long duration distinction regardless of context, speakers may manipulate the phonetic duration of sound segments when communicating various levels of emphasis, e.g., “It was *so/soo/soooo/sooooo/soooooo/sooooooo* creepy”. Speakers of English and Japanese diverged from this crosslinguistic preference by exhibiting a three-way and a six-way duration distinction, respectively, relative to various emphasis levels (Braver et al. 2016;

Kawahara & Braver 2014). In contrast, the crosslinguistic preference for a binary short-long distinction persisted in Cebuano (Austronesian > Philippines; Samejon 2019).

Compared to the production of onomatopoeias, our understanding of their perception is even more limited. Notably, the work of Assaneo et al. (2011) stands out in this regard, where they examined the acoustic characteristics of real world sounds of clicking and knocking and compared them to the production of *click* and *knock* onomatopoeias in Spanish. In their study, they isolated the most identifying sound segments of the *click* and *knock* onomatopoeias in Spanish, which they found to be the coarticulated [ik] and [ok] segments, respectively.

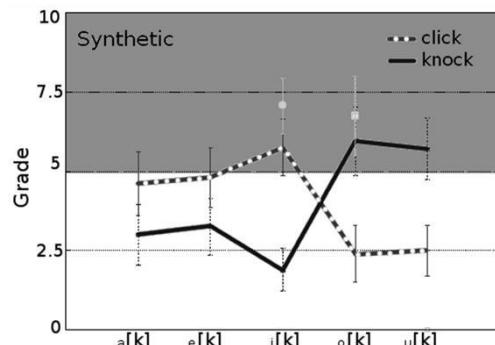


Figure 1. Results from Assaneo et al. (2011) which demonstrated native Spanish speakers gave higher 'grade' or had responded with stronger association on coarticulated [ik] segment for click, and coarticulated [ok] coarticulated segment for knock.

When participants were asked to associate the sounds they heard with either the sound of clicking or knocking as they know them from the real world, native Spanish speakers demonstrated a strong perceptual association of [ik] with clicking and [ok] with knocking, based on the overall mean of their responses. This underscores that onomatopoeias are indeed imitative, and speakers can perceive the key phonetic structures of onomatopoeias (such as the coarticulated segments of [ik] and [ok]) in relation to the imitated real world sound source.

However, since these results were based only on Spanish speakers, their crosslinguistic generalizability remains unclear, despite their discovery that the acoustic composition of the final /k/ and /χ/ in click and knock onomatopoeias are analogous to each other. Focusing on the same onomatopoeias as Assaneo et al. (2011), it is natural to ask whether the key identifying sound segments of click or knock in Spanish may be perceived differently by speakers of other languages.

2.2. *Click and Knock* Onomatopoeias

The crosslinguistic presence and structural resemblance of click and knock onomatopoeias make them viable candidates for analyzing the phonetic and perceptual realities of onomatopoeic words. These onomatopoeias imitate sounds characterized by short bursts, such as those produced by light switches, computer mouse clicks, and knocking on a door. Furthermore, the communicative use and association of these onomatopoeias with their sound sources have been established in the English language for centuries, dating back approximately 4 to 6 centuries ago (Oxford English Dictionary). Table 1 lists some crosslinguistic onomatopoeic sounds for knocking and clicking.¹

Table 1. Crosslinguistic examples of the sounds of clicking and knocking.

Language	Sound of clicking	Sound of knocking
Albanian	tik	tok
Bulgarian	trak	chuk
Dutch	tik	klop
English	klik	nok
Hebrew	qliq	tuq
Irish	clic	duñ
Malay	tek	tok
Persian	kilik	taq
Polish	klik	puk

¹ From Assaneo et al. (2011) and Körtvélyessy & Štekauer (2024).

The most common approach to analyzing the data in Table 1 is to identify shared phonetic combinations of *click* and *knock*. Both *click* and *knock* sounds feature /k/, which typically appears word-finally but can also occur word-initially. Further distinction between *click* and *knock* comes from the vowels, with [i] predominantly used in linguistic imitations of clicking sounds and [o] for knocking sounds. The short and abrupt acoustic signal of clicking or knocking is effectively captured through the articulation of [k], while the variation in vowels reflects the articulatory imitation of the acoustic resonance of the materials involved (Johansson et al. 2020). Meanwhile, the final coarticulatory segments of these onomatopoeias, [ik] and [ok] are clearly associated with one onomatopoeia over the other. Overall, analysis presented here provides only a helpful and comprehensive description of the phonemic structure of *click* and *knock* onomatopoeias across languages.

Cebuano *click* and *knock* onomatopoeias, *hagtik* and *hagtuk*, respectively, resemble the common crosslinguistic structure of these two imitated sound sources (Wolff 287).³ These onomatopoeias in Cebuano follow a similar pattern as in other languages. However, they are distinguished by the /i/ and /u/ vowel phonemes in their final syllables. The only alternative, *hagtak*, with the /a/ vowel, represents a cracking or dropping sound. This phonemic contrast may have constrained *click* and *knock* onomatopoeias in Cebuano to have /i/ and /u/, which aligns with the crosslinguistic preference for high front vs. non-high back vowels in imitations of *click* and *knock* sounds across languages. Moreover, the final consonant [k] in both Cebuano *click* and *knock* is unreleased, making this consonant unlikely to be lengthened, but the preceding vowel may likely be lengthened.

The exercise above suggests that a phonemic and segmental analysis of onomatopoeias may be quickly exhausted. While the phonetic consequences of the production of *click* and *knock* may be assumed, additional subsegmental investigation will be necessary. Such pursuit will help pinpoint how the imitation of extralinguistic sounds operates specifically at the acoustic level. When considering perception, we may hypothesize that the high front vowel /i/ is imitative of clicking sounds,

³ Wolff (1972) defined these words as: *hagtik*, sharp clicking sound; make a clicking, ticking sound, and *hagtuk*, loud knocking sound; produce a loud knocking sound.

while the non-low back vowels /o/ and /u/ function similarly for knocking sounds. If the question were merely about associating which phoneme or sound combinations belong to which real world sound source, the study by Assaneo et al. (2011) has provided answers. However, the question here is broader: whether identifying coarticulated segments like [ik] and [ok] are crosslinguistically perceptible as sounds associated with their respective onomatopoeias.

2.3. Present Study

The study examines the role of context and linguistic constraints in the production and perception of *hagtik* 'click' and *hagtuk* 'knock' onomatopoeias in Cebuano.⁴ Despite their imitative nature, we still lack understanding of how the phonetic realization and association of onomatopoeias change relative to the contexts in which speakers attempt to imitate them. Additionally, given that onomatopoeias function within the language system, it is highly probable that both the production and perception of onomatopoeias are influenced by linguistic constraints, whether due to structural reasons or perceptual processing limitations. We provided two experiments to this effect. They are discussed separately in the following sections.

Two experiments are involved in the study. Commonly used phonetic analysis and methods found in the literature (Johnson 2010; Ladefoged & Maddieson 1996) were employed to set up each experiment. Experiment 1 quantified phonetic changes in the onomatopoeias' most distinguishing segment, i.e., the vowel, by considering vowel quality (measured via F1 and F2), pitch (measured via F0), and length (measured via duration), via production task. Experiment 2 examined the perception (or the degree of association between the sound source and the onomatopoeia) of onomatopoeias via listening-perception task with an accompanying rating scale. When collecting the data, the experiments described in this paper

⁴ An anonymous reviewer suggested the phonetic transcriptions [hag.tak] and [hag.tuk] for *hagtak* and *hagtuk*, respectively. While it is not the central occupation of the article, we note that *hagtuk* transcribed as [hag.tuk] may be the potential transcription of its actual production following the claim of Tanangkingsing (2009). However, this vowel change might simply be a case of back vowel lowering as well (Intlekofer & Bishop 2016; Samejon 2022; e.g., Zuraw 2006). To simplify our crosslinguistic comparison, we opted to use [uk] as an approximate production of the back vowel in the final syllable of the Cebuano 'knock', which helped better explain our predictions and results for Experiment 2 later.

were presented to the participants, and upon their interest, they completed a consent form with a clause allowing them to withdraw their participation at any time. All identifying information was replaced with participation IDs, whose codes are only accessible to the researcher, with the code key stored on a secured computer. The participants were duly appreciated for their time and participation, with their contribution highlighted as essential to better understand Cebuano onomatopoeias.

Finally, choosing of the Cebuano language was based on two reasons: accessibility to speakers and its status as an understudied language relative to onomatopoeias. While Cebuano is widely spoken as a native language by a large population in the Philippines (~22 million), research in this language lags behind languages like Tagalog and Ilokano. Notably, none of the onomatopoeias in any Philippine language have been studied in a manner similar to the present study. Therefore, our findings in Cebuano can provide insights into the contextual and linguistic factors involved in the production and perception of onomatopoeias in Philippine languages and, by extension, other Austronesian languages. Ultimately, our findings aim to contribute to a better understanding of the sound symbolic nature of onomatopoeias more broadly.

Thus, with each research question corresponding to an experimental procedure described above, we ask the following questions:

RQ1: What phonetic changes (vowel quality: F1-F2; pitch: F0; length: duration) do the Cebuano *hagtik* 'click' and *hagtuk* 'knock' onomatopoeias undergo when produced in various imitation contexts?

RQ2: How does the perception of the sound source correspond to native and non-native speaker judgments of the distinctive coarticulatory segments of the *click* and *knock* onomatopoeias, i.e., [ik] and [uk] for Cebuano and [ik] and [ok] for Spanish, respectively?

3. Experiment 1 – Production task

In this section, we detailed how we carried out Experiment 1 along with the results. Experiment 1 explored how the Cebuano onomatopoeias *hagtik* 'click' and *hagtuk* 'knock' change phonetically in different imitation contexts. By analyzing vowel quality, pitch, and duration, we found subtle but important acoustic variations depending on context. Generally, the

vowels in these onomatopoeias shifted in quality, their pitch tended to increase, and their duration varied, highlighting a clear distinction between neutral and contextualized productions.

3.1. Procedure and Stimuli

The first experiment was a production task participated in by 10 native Cebuano speakers (5 females, 5 males; $M = 21.6$, $sd = 2.1$) from Metro Cebu with normal vision, hearing, and speech faculty. Participants were audio recorded on-site using a Zoom H4n Pro with a Shure SM35 condenser lavalier mic positioned about 2 inches away from the participant's right side of the mouth. The sampling rate for each audio recording was set to 44.1 kHz (16-bit).

Participants were asked to read two sets of randomized stimuli from a computer screen. The first set of stimuli focused on producing *click* contexts (i.e., neutral, mouse click, light switch click, fuse box switch click), and the second set focused on producing *knock* contexts (i.e., neutral, soft door knock, typical door knock, intense door knock). For “neutral” context in particular, we instructed participants to produce an out-of-the-blue sound of *click* and *knock*. Practice sessions were administered before each experimental session to ensure that each participant understood the task.⁵ In the end, the stimuli were composed of 4 contexts, 3 vowels /a, i, u/, 3 repetitions, and 2 sets (one for *click* and one for *knock*).

3.2. Acoustic Analysis

Praat (Boersma & Weenink 2023) was used to isolate vowel segments and perform further acoustic analysis. To measure vowel quality, the vowel's first formant (F1) and second formant (F2) frequencies were extracted. F1 indicates vowel height, and F2 indicates backness relative to the vowel

⁵ While this instruction can be interpreted in different ways by participants, they seem to have a fairly similar production of what is an out-of-the-blue production of *click* and *knock* in Cebuano based on our results. The inconsistency of their interpretation and, thus, their production, can be seen as a weakness in this approach which may be improved in later iteration of this project. However, by examining multiple acoustic measures, the study will avoid narrowing the effect of context to duration only, for example, i.e., by instructing the participants to lengthen the vowel to indicate changes in the context provided. Examining multiple acoustic measures will hopefully capture the nuances employed by the speakers in their interpretation and production. All of this interpretive and analytical decision aims to capture a better picture of the phonetic changes that occur in the production of onomatopoeias relative to imitative particular contexts.

space. A vowel-intrinsic Bark-transform method was used for normalization to reduce physiological effects. To measure pitch, the fundamental frequency (F0) was extracted. To measure length, the duration of the isolated vowel segment was extracted and recalculated to obtain the vowel duration ratio.

3.3. Statistical Analysis

Statistical analyses for Experiment 1 were completed in R (RStudio Team 2020). The lme4 package was used to evaluate each model. Experiment 1 used dummy-coded linear mixed-effects models with each acoustic measure as the response variable and *context* as the predictor (reference level: “xneut”). Random effects in these models included *speaker* and *repetition*. The emmeans package was used for post-hoc analyses.

3.4. Predictions

Experiment 1 was duly designed to answer RQ1, i.e., “What phonetic changes (vowel quality: F1-F2; pitch: F0; length: duration) do the Cebuano *hagtik* ‘click’ and *hagtuk* ‘knock’ onomatopoeias undergo when produced in various imitation contexts?” As such, we predict that Cebuano speakers’ production will be sensitive to context in terms of any phonetic changes in their production of *click* and *knock* onomatopoeias. In particular, the vowel quality, pitch, and duration will correspond relatively distinctly to each respective context provided in the experiment (Braver et al. 2016; Samejon 2019).

3.5. Results

3.5.1. Vowel Quality – F1 and F2

Vowels are characteristically known to have identifiable acoustic properties based on the first formant (F1) and the second formant (F2) both of which reflect vocal tract resonance, especially relative to the position of the tongue. F1 values indicate the height (low or high) of the vowel produced, while F2 indicates the backness (or frontedness) of the vowel. Using these two measures, we can track changes in the vowels based on the contexts in which they were produced by the speakers.

For *click* contexts, contextualized /i/ vowel production was lowered and further back compared to neutral production of *click* (Fig. 2A).⁶ The model found two significant difference where the fuse context was produced generally with lower /i/ vowel via F1, $\beta = -0.80$, $t = -2.22$, $p < 0.05$, and the mouse context had much backer /i/ vowel via F2, $\beta = 0.98$, $t = 2.79$, $p < 0.01$, relative to neutral contexts. Given the multiplicity of comparisons, we pursued Bonferroni-corrected post-hoc analyses to avoid Type I error. We found that for the F1 and F2 models only the F2 model showed statistically significant comparison between neutral context and mouse context, $p < 0.05$.

For *knock* contexts, the vowel /u/ was also lowered but moved further to the front compared to neutral production of *knock* (Fig. 2B). For F1, we found a couple of significant differences including much lower /u/ for the door knocking and intense door knocking contexts, i.e., $\beta = -0.59$, $t = -2.16$, $p < 0.05$ and $\beta = -0.74$, $t = -2.81$, $p < 0.01$, respectively. However, based on a Bonferroni-corrected post-hoc analysis, the only significant comparison was between neutral context and intense door knocking, $p < 0.05$. For F2, we found a significant difference between the neutral context and a contextualized door knocking, $\beta = -0.82$, $t = -2.54$, $p < 0.05$. Yet this difference is not significant via a Bonferroni-corrected post-hoc analysis, $p = 0.07$.

The results suggested that there were slight but crucial phonetic changes in the vowels of onomatopoeias relative to the contexts in which the speakers produced them. These changes typically manifest via lowering their /i/ and /u/ vowel production, but with a more back /i/ and a more fronted /u/ in most contexts. Significant results point to a more back *click* production and lower *knock* production relative to neutral contexts. In other words, the results suggest a two-way vowel quality distinction between neutral and contextualized production in *click* and *knock* onomatopoeias more generally.

⁶ Indeed, onomatopoeias cannot be entirely neutral in terms of context given that they are imitations of what speakers experienced in the real world. What *neutral* means in the present study is that the onomatopoeia was 'plainly read' without any additional context given beforehand, compared to others imitation prompts where a particular context was explicitly included.

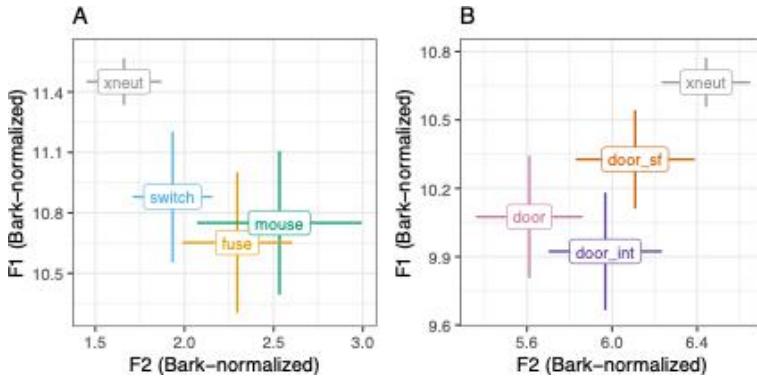


Figure 2. F1 (vertical line) and F2 (horizontal lines) of *click* (A) and *knock* (B) production in various imitation contexts. Lines represent standard error. Each label represents the imitation contexts where “xneut” is the neutral production.

3.5.2. Pitch – F0

Pitch is the highness and lowness of tone in human speech, dependent on the vibrations in the vocal cords. This process is acoustically identifiable based on the speech signal's fundamental frequency (F0) measured in hertz (Hz). Given that pitch is usually anchored on the vowel, we used the vowel's F0 measure. The pitch information from the vowels in our stimuli allowed us to trace whether speakers indicate onomatopoeias in various imitation contexts by changing their pitch.

Across *click* and *knock* contexts, there was a relative change in pitch when the production of onomatopoeias was further contextualized than when no context was specified (Fig. 3). Compared to the neutral context, there was a significant increase in pitch when imitating more contextualized *click* especially for light switches, $\beta = 11.96$, $t = 2.08$, $p < 0.05$. There was also an increase in from a *knock* in neutral context to an intense door knocking, $\beta = 8.62$, $t = 2.65$, $p < 0.01$. However, Bonferroni-corrected post-hoc analysis for *click* F0 measure showed no significant comparisons. Similarly, Bonferroni-corrected post-hoc analysis for *knock* F0 measure only showed near significant difference between neutral context and intense door knocking and intense door knock and soft door knock, both at $p = 0.06$.

Similar to vowel quality, changes in pitch in the production of contextualized onomatopoeias were evident. There was a general trend of increased pitch, which distinguishes the neutral context production of onomatopoeias from others. To the extent that there were differences, they were markedly in binary terms.

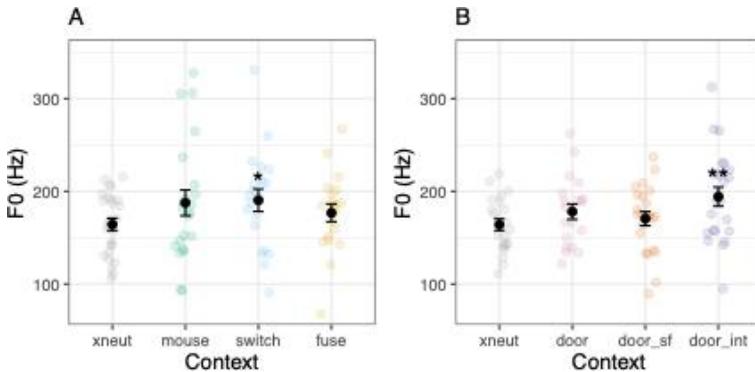


Figure 3. F0 values of *click* (A) and *knock* (B) production in various imitation contexts. Bars represent standard error. Significant difference based on model values: $p < 0.05$ ‘*’, $p < 0.01$ ‘**’, $p < 0.001$ ‘***’.

3.5.3. Length – Duration

The length of a phone refers to the time it takes to produce a particular sound from its onset to offset, and this is usually measured in terms of its phonetic duration (milliseconds). Phonetic duration is used by speakers for emphatic production in Cebuano (Samejon 2019) and other languages like English (Kawahara & Braver 2014). We expanded this observed contextual sensitivity of phonetic duration to the production of *click* and *knock* onomatopoeias. In particular, we considered the phonetic duration ratio of the vowels /i/ and /u/ in various imitation contexts. The decision to use duration ratio instead of raw duration values was made to lessen the effect of speech rate on vowel duration. At the same time, duration ratio better shows how much of the vowel's duration has changed in various imitation contexts relative to the total duration of the word.

There was increased duration ratio in *click* contexts, where the duration of /i/ vowel increased relative to the duration of the word. However, speakers only distinguished this between their neutral production of *click* and their production of a mouse click and nothing else (Fig. 4A). There was at least 5 percent increase in the duration of /i/ vowel

in a word in contrast to their typical production of clicking sound, $\beta = 5.04$, $t = 4.61$, $p < 0.01$. Bonferroni-corrected post-hoc analysis, on the other hand, showed three significant comparisons, i.e., between neutral context and mouse click, mouse click, and fuse click, and mouse click and light switch, all at $p < 0.01$. This three-way difference is surprising, i.e., neutral context > mouse click > fuse click/light switch click.

In *knock* contexts, the duration ratio of /u/ vowel was significantly increased in all contexts (Fig. 4B). Relative to their neutral production of *knock*, the /u/ vowel in the context of door knocking increased to about 4 percent, soft door knocking increased to 6.11 percent, and intense door knocking to 5.67 percent, i.e., $\beta = 4$, $t = 2.56$, $p < 0.05$, $\beta = 6.11$, $t = 4.05$, $p < 0.01$, and $\beta = 5.67$, $t = 3.72$, $p < 0.01$, respectively. When examining these multiple comparisons further via Bonferroni-corrected post-hoc analysis, the significant difference across *knock* contexts were between neutral context and soft door knocking, $p < 0.01$, and between neutral context and intense door knocking, $p < 0.01$.

The duration of the key distinguishing vowels in both *click* and *knock* onomatopoeias showed contextual effect. For *click* contexts, we only found one context where /i/ vowel duration ratio increased while all *knock* contexts showed increase in /u/ vowel duration relative to the neutral production. Overall, we found a general two-way distinction between neutral and contextualized production, and across contextualized productions of onomatopoeias relative to duration.

4. Experiment 2 – Production Task

In this section, we described how we prepared and administered Experiment 2, and reported the results of the experiment. Experiment 2 examined how native Cebuano speakers perceive the association between sound sources and onomatopoeias using a listening-perception task with rating scales. What we found is that the Cebuano participants generally rated the expected *click* and *knock* sounds in Cebuano stimuli similarly to a previous study. Notably, *click* was associated with both [uk] and [ik], while *knock* was strongly linked to [uk]. Yet, when listening to Spanish stimuli, the Cebuano participants did not replicate these results.

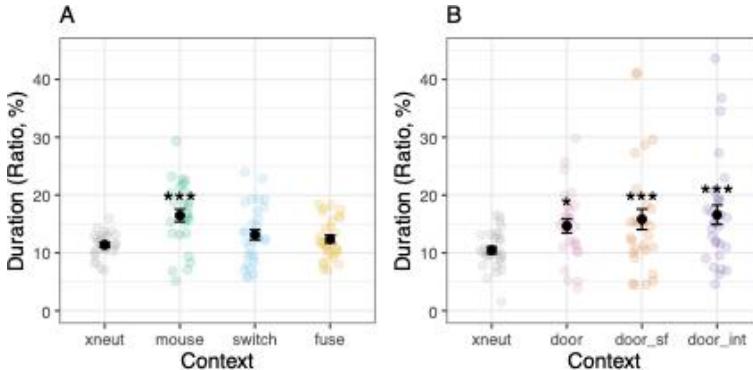


Figure 4. Duration ratio of *click* (A) and *knock* (B) production in various imitation contexts. Bars represent standard error. Significant difference based on model values: $p < 0.05$ ‘*’, $p < 0.01$ ‘**’, $p < 0.001$ ‘***’.

4.1. Procedure and Stimuli

The second experiment was a perception task participated in by 28 native Cebuano speakers ($M = 29.1$, $sd = 6.4$), none of whom were participants in Experiment 1. Instead of visual stimuli, participants were presented with several audio stimuli online via Qualtrics. Each participant was asked to confirm that they knew what a typical mouse click sounds like when being tested on *click* associations and what a typical door knock sounds like when being tested on *knock* associations. Based on the stimuli they heard, they had to rate how closely the sound they heard was associated with their knowledge and experience of a typical mouse click or door knock, with “1” indicating no association and “10” indicating a perfect association.

The stimuli used in the study were clipped audio files from *hagtik*, *hagtak*, and *hagtuk*, i.e., coarticulated [ik], [ak], and [uk] segments, produced by four native Cebuano speakers (2 females) from Experiment 1. To process their audio recordings, the vowel was first located, and the vowel duration was divided into four parts in Praat (Boersma & Weenink 2023). Then, to isolate the coarticulated [ik], [ak], and [uk] segments, the onset of the final quarter of the vowel became the starting point, extending the total duration of the segments rightward to approximately 100 milliseconds (Fig. 5). We expressed this clipping procedure mathematically as:

$$y = \left(\frac{3x}{4}\right) + m$$

where $3x/4$ is the starting point of the final quarter of the partitioned vowel sound, m is the time added to the result of the partitioned vowel duration, and y is the duration of the experimental token from onset to offset which should be around 100 milliseconds in total.

Next, these isolated coarticulated segments were extracted and again processed in Praat to normalize their intensity to 73 dB, which controlled for loudness of each clipped audio files. Lastly, these clipped and processed audio files were imported to Qualtrics as perception experiment stimuli. The Cebuano audio stimuli created and used for this project were hosted in <https://osf.io/n9u5e/>.

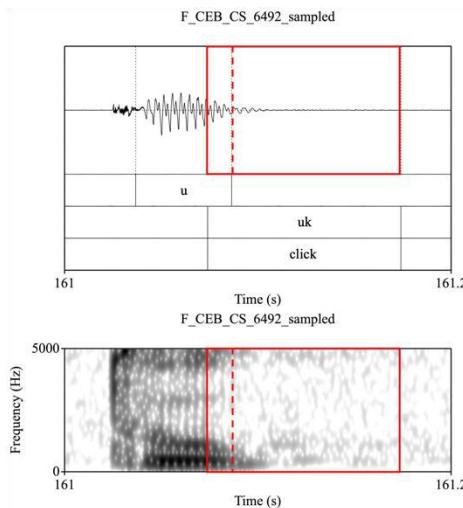


Figure 5. Example of the clipping procedure for the perception task stimuli. The smaller jagged red rectangle marks the final quarter of the isolated vowel. The larger solid red rectangle marks the total duration of the stimuli. The first tier labels the isolated vowel. The second tier labels the coarticulated segment. The third tier labels the sound association the participants are to make with the audio clip.

In order to test native and non-native perception, we included the stimuli in Cebuano and the publicly available coarticulation stimuli in Spanish by Assaneo et al. (2011). The audio clips from Assaneo et al. (2011) were also processed to normalize their intensity to 73 dB before being used in the present study. A total of 4 sets of stimuli were created, including 32 audio clips, i.e., 2 sets for each language, with 8 audio clips per set. Two groups of participants listened to the same 4 sets of stimuli: one group rated how much the sounds they heard resembled a typical *click*, and the other group did the same for a typical *knock* based on their experience and knowledge of these sounds.

Finally, an important step in the perception task was that participants were not informed that the sounds they would hear came from speech signals or that they were drawn from two different languages, namely Cebuano and Spanish. Participants were simply instructed to rate whether the 'sound' they heard resembled the sound of clicking or knocking. This approach aimed to allow participants to focus on associating their knowledge and experience of *click* and *knock* sounds to the stimuli they heard, rather than feeling pressured to provide a correct response.

4.2. Statistical Analysis

Similar to Experiment 1, statistical analyses for Experiment 2 were also completed in R (RStudio Team, 2020). Given the rating-type response indicated by participants, the ordinal package was used to evaluate each model. Experiment 2 used cumulative link mixed-effects models with *rating* for each language's *click* and *knock* perception as the response variable and coarticulated segment as the predictor (reference level: [ak]). Random effects in these models included *speaker*.⁷

4.3. Predictions

Experiment 2 was pursued to provide an answer for RQ2, i.e., "How does the perception of the sound source correspond to native and non-native speaker judgments of the distinctive coarticulatory segments of the *click* and *knock* onomatopoeias, i.e., [ik] and [uk] for Cebuano and [ik] and [ok]

⁷ We would like to thank the anonymous reviewer who recommended to use cumulative link mixed-effects models instead of mixed-effects linear regression models, given the scale participants used for rating the audio stimuli, i.e., 1-10.

for Spanish, respectively?" We predict that Cebuano speakers will be able to associate the most identifying coarticulated segments of Cebuano *click* and *knock* onomatopoeias, i.e., [ik] and [uk], more favorably with their knowledge and experience of the sound of clicking or knocking in the real world. Moreover, the crosslinguistically identifiable coarticulated segments of *click* and *knock* are acoustically optimized in imitative speech (Assaneo et al. 2011). This suggests that a speaker will be able to easily identify a click sound with the coarticulated [ik] segment from another language. Therefore, we also predict that the judgment of Cebuano speakers on similar *click* and *knock* coarticulated segments from another language will pattern in the same way as the pattern found in Spanish by Assaneo et al. (2011).

4.4. Results

4.4.1. Cebuano Stimuli Perception

The native Cebuano speaking participants demonstrated clear associations between *click* and *knock* relative to the coarticulated segments when they listened to the Cebuano stimuli (Fig. 6A).

For *click*, [ak] was not strongly associated to the sound of *click* based listener ratings ($M = 3.14$, $sd = 2.20$) while [ik] and [uk] were both rated much higher ($M = 4.20$, $sd = 2.88$; $M = 4$, $sd = 2.45$). The increased rating of [ik] and [uk] relative to [ak] were also statistically significant, $\beta = 0.52$, $z = 2.78$, $p < 0.01$, and $\beta = 0.41$, $z = 2.21$, $p < 0.05$. To investigate which responses were robustly different given the multiplicity of comparisons, a Bonferroni-corrected post-hoc analysis was pursued and returned only a significant difference between [ak] and [ik], $p < 0.05$. We, nonetheless, found a near significant difference between [ak] and [uk], $p = 0.08$.

For *knock*, [uk] was rated much higher as the sound associated to *knock* ($M = 5.40$, $sd = 3.10$) compared to [ak] and [ik] ($M = 4.18$, $sd = 2.72$; $M = 3.50$, $sd = 2.50$). The increased rating for [uk] relative to [ak] was statistically significant, $\beta = 1.23$, $z = 3.11$, $p < 0.01$. A Bonferroni-corrected post-hoc analysis for multiple comparisons was also pursued and revealed that both [ak] and [ik] were significantly different from [uk], both at $p < 0.01$.

In general, the perception results revealed that native Cebuano speakers rated the expected coarticulated segments in the Cebuano stimuli, patterning similarly to Assaneo et al. (2011)'s results. The results also showed an emerging association of *click* to [uk] in addition to [ik], while *knock* was only strongly associated with [uk]. This expanded association of [uk] with *click* might not be solely due to acoustic similarity but rather to a more conventionalized use of similar onomatopoeias in Cebuano. We explore this further in the discussion section.

4.4.2. Spanish Stimuli Perception

Results for the Spanish stimuli perception revealed that the native Cebuano participants had difficulty in associating non-native sounds to either *click* and *knock* (Fig. 6B).

In fact, [ek] and [ik] were the lowest rated sound to be associated to *click*, i.e., $M = 1.86$, $sd = 1.21$ and $M = 2.04$, $sd = 1.14$, respectively. We also found that [ok] is relatively the highest rated association to *click*, $M = 2.64$, $sd = 1.21$. The difference between the rating given to [ak] and the expected high front vowels, however, was not significant, [ek]: $\beta = -0.48$, $z = -1.68$, $p = 0.09$, [ik]: $\beta = -0.17$, $z = -0.64$, $p = 0.53$.

Across the coarticulated segments in Spanish, [ok] was highest rated sound to be associated to the *knock*, $M = 4.29$, $sd = 3.12$. The increased rating for [ok] relative to [ak], however, was not significant, $\beta = 0.39$, $z = 1.58$, $p = 0.11$.

The native Cebuano participants failed to replicate the results in Assaneo et al. (2011) when listening to the production of *click* and *knock* coarticulated segments in the Spanish stimuli. These results were surprising given that *click* and *knock* sound sources are very similar across languages by virtue of their onomatopoeic representations. Yet the supposed stable speech sounds in *click*, i.e., [ik], and *knock*, i.e., [ok], onomatopoeias were not perceptually different from other alternatives for the Cebuano listeners.

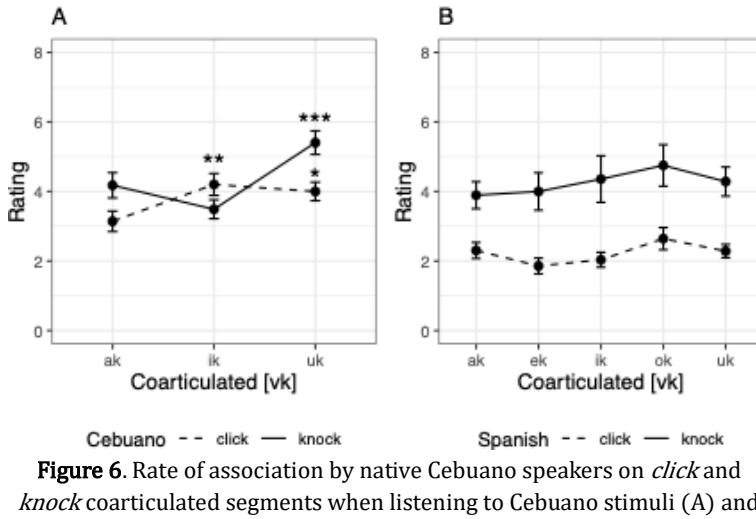


Figure 6. Rate of association by native Cebuano speakers on *click* and *knock* coarticulated segments when listening to Cebuano stimuli (A) and Spanish stimuli (B). Compare this Figure 1. Bars represent standard error. Significant difference based on model values: $p < 0.05$ ‘*’, $p < 0.01$ ‘**’, $p < 0.001$ ‘***’.

5. General Discussion

The present findings revealed that the production of *click* and *knock* onomatopoeias is context-sensitive and follows a language-dependent perceptual association to the sounds they imitate. These findings improve our understanding of the phonetic changes involved in the contextualized production of onomatopoeias and the language constraints that determine sound-to-meaning associations of coarticulated segments. Moreover, the predictions set forth in the study were not entirely borne out. Inasmuch as there is context-sensitive production of onomatopoeias, it has mainly been a two-way distinction and can be attributed to the common linguistic tendencies in the Cebuano language. Interestingly, while crosslinguistic evidence supports a strong association between the onomatopoeias and the sounds they imitate, perception of this association may be language-specific.

5.1. Two-Way Distinction

A surprising finding is that a two-way distinction persisted in vowel quality. This may be a type of change where, in order to create contrasts, vowels

are lowered and centered in contextual imitative production relative to a more neutral one. Proposed explanations for changes in vowel quality in Cebuano have been made, i.e., either stress-unstressed distinction (Samejon 2022; see also Garellek & White 2015) or syllable/phrase-finality (Tanangkingsing 2009; see also Kaufman forthcoming). Neither explanation was satisfactory based on the results. Since the Cebuano *click* and *knock* *vowels* investigated were found on the final syllable of the onomatopoeia, which is lexically unstressed, there would have been no change in vowel quality in their production. In other words, these vowels will have remained in their 'neutral' state because there is no stress-shifting morpheme that was added to the word (Shryock 1993)—but this had not been the case. The quality of the vowel still changed. On the other hand, syllable-finality cannot be a better explanation because it predicts that the /i/ and /u/ are lowered to /e/ and /o/ in the final position. Since the vowels in the onomatopoeias were further lowered and then centralized, it might be improbable that the already lowered vowels à la Tanangkingsing are produced as something like a schwa or [a]. An alternative explanation to what we have observed may perhaps be the effect of *context*. When linguistic expectations fail, speakers rely on the richness of context to establish the acoustic distinctions necessary to communicate a particular utterance (Kawahara & Braver 2014), or in the case of onomatopoeias, to imitate extralinguistic sounds in context.

Similar to vowel quality, pitch differences suggest a two-way distinction. Cebuano is known to have only low-high intonation or pitch differences, usually found at phrase edges (Tanangkingsing 2009; Wolff 1972). While the neutral production was not at the phrase edges, the production of contextualized *click* and *knock* is in citation form, which might have exacerbated the difference between neutral production and production in other contexts. This is a potential weakness in the production stimuli used in the study. Additionally, upon further reflection on pitch, our results suggest that there may be no significant difference regardless of context. This implies that pitch may be less important for distinguishing various contexts of onomatopoeic productions. Analyzing pitch in Cebuano requires more attention and can be improved on future work.

For length, Ladefoged & Maddieson (1996) observed this crosslinguistic tendency in lexical contrasts, at least for durational differences. The two-way distinction for duration in this study is expected

because Samejon (2019) observed this phonetic behavior in Cebuano much earlier. This does not necessarily mean that languages with two-way distinctions cannot imagine, exert effort, or even produce more gradient distinctions (Braver et al., 2016), but a two-way distinction is a default or the strongest tendency for these languages more generally.

It is reasonable then to ask why a two-way distinction is preferred. Perhaps, a two-way distinction may be less perceptually difficult compared to a three-way distinction, for example. Liljencrants & Lindblom (1972) theorized that in order to minimize confusability, vowels disperse in locations of the vowel space far enough from each other to maximize vowel distinctiveness. The same mechanism may be at work in the contextualized production of onomatopoeias, i.e., the pervasiveness of a perceptually easier but still contrastive two-way distinction across the board. Moreover, pre-existing language-specific distinctions in vowel quality, pitch, and length may have contributed to speakers' predisposition for a two-way distinction rather than a more gradient distinction. Such preponderance of a two-way distinction in phonological features of languages like Cebuano may warrant closer examination in light of this binary distinction classically espoused in the literature (e.g., whether a sound is +voiced or -voiceless, Chomsky & Halle 1968; but see three-way length distinction in Mixe, Hoogshagen 1959).

5.2. Crosslinguistic *Click* and *Knock*

The linguistic structure of *click* and *knock* onomatopoeias in the languages of the world are grossly similar, yet the perceptual association of each one to their respective sound sources differ. Across languages, imitation of *click* and *knock* sounds is composed of at least two identifying coarticulated segment [ik] for *click* and [ok] for *knock*. Assaneo et al. (2011) established that [ik] and [ok] were the closest linguistic representation of the acoustic characteristics of real world *click* and *knock* sounds, which suggests a strong sound symbolic and transparent association between sound and meaning. The native Cebuano speaking group in the study, however, did not follow this generalization especially when listening to Spanish coarticulated segments. Instead, the native Cebuano speaking group in the study only exhibited similar patterning as Assaneo et al. (2011)'s when listening to Cebuano coarticulated segments.

Also, the current findings have implications for the phoneme inventory similarity hypothesis, which posits that linguistic patterns are similar between languages with the same phoneme inventory (Lavoie 2002; Samejon 2021). Cebuano does not have the phoneme /χ/, so the decision to replace the velar plosive /k/ with velar fricative /χ/ in the final consonant of the coarticulated segments in Assaneo et al. (2011) may have introduced difficulty in the perception of the Spanish stimuli by Cebuano speakers. This alternation between /k/ and /χ/ should not have been a problem for Cebuano speakers because the acoustic properties of word-final /k/ and /χ/ in the onomatopoeias in question were found to be analogous to each other (Assaneo et al. 2011). Yet, when presented with a non-native final consonant in /χ/, the sound symbolic valence of the Spanish stimuli deteriorated fairly quickly and contributed to Cebuano speakers' failure to associate the expected coarticulated segments to *click* and *knock* sounds.

The use of either a velar plosive or fricative as the final sound may have an effect on the noise-to-duration ratio of the stimuli. One may even argue that this exacerbated the difference in the perception of Cebuano speakers on the Spanish set of the stimuli. Indeed, while the present study's stimuli were about 100 ms each, each stimulus mostly contained silence due to the nature of unreleased /k/ in the final coarticulatory segment of Cebuano *click* and *knock* onomatopoeias. This means that only a quarter of the stimuli, or 25 ms, contained acoustic information and not silent compared to the 100 ms of non-silent audio in the Spanish stimuli. Had Cebuano speakers found it problematic to associate what they heard from a mostly silent stimulus, they would have failed in the Cebuano onomatopoeia perception task instead of the Spanish one. This means that perceptual success among Cebuano speakers do not entirely rely on whether they hear a sound within the full 100 ms or not. Their success seems to rely mainly on the meaningfulness or familiarity of the sound they hear even when it is only about 25 ms, i.e., successfully understanding the information contained in the stimuli that used the velar plosive compared to the stimuli with velar fricative regardless of the length of acoustic signal.

More crosslinguistic work is needed, but it is more likely that the non-distinction among Cebuano speakers is due to crosslinguistic differences rather than the duration of acoustic information contained in the sampled Spanish stimuli. Besides, relative to the duration, humans are sensitive to

durational cues as short as 5 ms to 12.5 ms (Näätänen et al. 1989; Johnson 2010). Adding to the fact that the coarticulated segments of *click* and *knock* onomatopoeias are perceptible, the difference in the noise-to-duration ratio in the Cebuano stimuli becomes irrelevant to the perceptual asymmetry found in the performance of Cebuano speakers on Cebuano and Spanish *click* and *knock* sound associations.

Lastly, the perceptual difference between *click* and *knock* onomatopoeias can go beyond their typical crosslinguistic phonetic tendencies. In Cebuano, we observe a very typical [ik] 'click' and [uk] 'knock' distinction, but Cebuano speakers' perception of *click* was also high for coarticulated [uk] segments. This was surprising given that Cebuano onomatopoeias *hagtik* and *hagtuk* are contrastive relative to *click* and *knock* onomatopoeias. However, looking further into the possible alternatives in the language, there is another word that indicates a clicking event: *tupluk-tupluk*, which is a word typically associated to typing on a keyboard. Using a digital or physical keyboard is a more recent activity and speakers have to deal with the fact that at some point they will have to communicate the sound that clicking, tapping, or pressing on a keyboard produces. Among Cebuano speakers, they seem to agree to having the final coarticulated [uk] segment represent the clicking sound. In fact, Tagalog and Czech have similar sounds for typing on a keyboard, too, i.e., *ku chuk* and *t'uk t'uk*, respectively, which makes the Cebuano case not too isolated. The connection between the representation and perception of Cebuano and Czech *click* onomatopoeia, two different languages families, may be explored further as well. Moreover, the word *tupluk-tupluk* in Cebuano is not necessarily sound imitative but may have been conventionalized to extend and carry the same imitative function as the Cebuano *click* onomatopoeia. Conventionalization of a word that describes an event into an onomatopoeia is not an uncommon process in onomatopoeic word formation crosslinguistically, and that eventive word may have its roots on imitation in the first place anyway (Körtvélyessy & Štekauer 2024; see also Perlman et al. 2015). As such, Cebuano speakers became comfortable in associating both [ik] and [uk] when perceiving clicking sounds.

6. Conclusion

The present study demonstrated that the production and perception of onomatopoeias are reflexes of crosslinguistic and language-specific constraints. Crosslinguistically, Cebuano exhibited the widely attested two-way or binary distinction when establishing contrasts on contextualized *click* and *knock* onomatopoeias. Language-specifically, Cebuano speakers found it challenging to perceive non-native *click* and *knock* onomatopoeias and even extended the use of coarticulated [uk] segments for clicking sounds (in addition to [ik]) when perceiving Cebuano clicking sound. Perhaps, the collective experience of speakers to keyboard typing made the sound symbolic nature of coarticulated [uk] sound conventionalized for clicking as well.

Additionally, the typological features and sociocultural setting of the Cebuano language and its speakers resemble some Austronesian and Philippine ethnolinguistic groups. Thus, the findings of the present study may potentially provide a general prediction on the patterns of sound-meaning associations for these groups of language speakers. Chomsky and colleagues (Hauser et al. 2002) have also already noted that humans' sound imitation through speech is somewhat overlooked. Consequently, our findings will further contribute to a more systematic understanding of sound symbolic imitations in the world's languages.

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Address for Correspondence

Kevin Samejon
Department of Linguistics
Boston University
621 Commonwealth Ave.
Boston, MA 02215
United States of America

ksamejon@bu.edu

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What is the Best Way to Teach the Endangered Languages of Taiwan? A Call for Quantitative Research on Language Revitalization

Joshua K. Hartshorne (麻省總醫院健康職業學院 MGH Institute of Health Professions)

彭卉琪 Huei-Ci Peng (國立臺灣師範大學 National Taiwan Normal University)

Abstract

Significant effort and resources are being expended on the revitalization of Taiwan's indigenous languages, including a large-scale effort to provide immersion learning in the preschool years. The literature on teaching indigenous and minority languages provides little quantitative guidance on how the effort and resources would be most profitably directed. We review the quantitative research that does exist and suggest high-priority directions for further work.

Keywords: Language Revitalization; Immersion Schooling; Bilingual Education; Austronesian Languages; Formosan Languages

Languages are rapidly disappearing. More specifically, the indigenous languages of Taiwan are disappearing. By definition, languages disappear because they are less and less reliably acquired by younger generations. In a sense, the solution is simple: teach the younger generations the languages.

In practice, the problem is more complex. The one method that we know reliably results in fluent speakers of a language is to raise them in homes that speak the target language and in communities where the language is widely-used and high-status. Unfortunately, this method is not available for under-resourced, endangered languages such as the indigenous languages of Taiwan.

Without that option available, communities trying to increase intergenerational transmission of their language turn to a variety of options, such as immersion schools (where the target language is the language of instruction), bilingual immersion schools (both the target language and a majority language are used for instruction), language nests (essentially pre-school immersion programs), college courses, and master-apprentice programs (where a younger individual is paired with a fluent elder) (Bommelyn & Tuttle, 2018; Gessner et al., 2018; Hinton, et al., 2018a; Hornberger & De Korne, 2018; O'Regan, 2018; Olawsky, 2013; Todal, 2018; Treuer, 2020; Wilson, 2018). Unfortunately, communities that adopt these programs rarely reverse language disappearance, or even clearly slow it (Fishman, 1991; Goalabré, 2013; MacCalum, 2007; McNaught, 2021; O'Grady, 2018; O'Regan, 2018; Todal, 2018). For instance, decades of immersion schooling for Gaelic and Breton have produced new speakers at a fraction of the rate older speakers are dying (Goalabré, 2013; MacCalum, 2007).

Any number of explanations have been offered, including ineffectiveness of the programs, failure to adhere to the programs, lack of instructors, insufficient community interest, antithetical government policies, culturally or linguistically inappropriate pedagogical practices, and lack of opportunity to use the language outside the classroom (Hinton, et al., 2018b). Unfortunately for policy-makers and language activists, a list of factors that influence revitalization success is of limited usefulness unless accompanied by effect sizes. By analogy, regular exercise and better footwear will both improve marathon times, but one of these will have a much larger effect than the other. Many revitalization interventions are

extremely expensive and time-consuming. For instance, a study of 33 master-apprentice pairs found that while the program requirements were onerous and difficult to meet, leading to high dropout rates, the mentors judged that apprentices did not learn enough to be effective speakers in the community (McIvor et al., 2023).

Where efficacy is studied, it is usually through small case-studies using qualitative methods such as interviews and observation (Hornberger & De Korne, 2018). This is insufficient (for additional discussion, see O'Grady, 2018; Obiero, 2010; Wiltshire et al., 2024; 周宣辰, 2016). Quantitative studies, where they exist, are often too small to assess statistical significance or measure effect sizes. For instance, one of the highest-quality studies of master-apprentice programs had only three subjects (Olawsky, 2013), and another had two (Sherkina-Lieber, 2021).

In the remainder of this note, we review what little is known quantitatively, with a particular focus on relevance to the case of Taiwan's indigenous languages. Our primary goal is to highlight the paucity of quantitative knowledge, in order to spur research that would better enable communities and decision-makers in Taiwan to reach their revitalization goals. We conclude with some specific suggestions.

First, however, we point out one area where Taiwan is substantially ahead of the curve. One difficulty in evaluating language revitalization programs is that often there are no good assessments of language proficiency, making it difficult to establish just how much of the language has actually been learned (McIvor et al., 2023; O'Grady, 2018; Obiero, 2010; Olawsky, 2013; Wiltshire et al., 2024). Simply counting numbers of self-reported speakers of a language is unreliable: individuals vary substantially in what they count as "speaking a language", and their answers are often caught up in ethnic pride or private guilt. Taiwan has a robust system of standardized exams for all 42 recognized dialects. While these exams are not without criticism, they are much better than what is usually available (see O'Grady, 2018).

What Leads to (Un)successful Revitalization?

Teachers and Materials. A sufficient supply of well-trained teachers and appropriate materials would seem to be a prerequisite for successful education programs. In Taiwan, several language textbook series have been published, though these remain in a sense experimental (馬淑辛, 2023).

Different kinds of languages need different kinds of instruction — for instance, it has been argued that polysynthetic languages require distinct pedagogy (Green et al., 2018) — and the education establishment's experience with teaching Taiwan's indigenous languages — and Austronesian languages more generally — is limited. These languages contain many features that are unusual in more commonly-taught languages, such as infixes, circumfixes, and the voice system. Similarly, in conversations, some experts we consulted worried that existing textbooks are often designed around English or Chinese textbooks, which are intended to get second-language learners speaking foreign languages in school rather than enabling heritage speakers to use their traditional language in their community, which involves (for instance) very different vocabulary.

Similarly, while preschool teachers in Taiwan are effectively required to have 2-4 years of training in early childhood education (Executive Yuan, 2022), this training is not tailored to the distinct needs of heritage language communities or immersion schooling (Björklund & Mård-Miettinen, 2014; Kisselev et al., 2020). There are now seven universities in Taiwan offering training in the teaching of indigenous languages. Anecdotally, however, many teachers still lack this training (see also 梁有章, 2018).

It remains to be seen just how much tailored textbooks and teacher training ultimately matter. Children have learned languages since time immemorial without access to textbooks or teachers, simply by being spoken to. A more pressing matter may be an insufficient supply of teachers and media. In Taiwan, as in many countries experimenting with immersion education, there appears to be a shortage of qualified teachers who are fluent in the target language (Dwyer et al., 2018; Lin et al., 2022; Mumford, 2024; O'Grady, 2018; 周宣辰, 2016; 梁有章, 2018). Lack of fluent teachers is particularly acute for languages where most fluent speakers are elderly, which is increasingly the case for many languages in Taiwan. This can be addressed in part by teaching the language to the teachers: In Hawai'i, 99% of instructors in Hawaiian immersion schools in 2010-2011 were non-native speakers (NeSmith, 2012). However, because people who begin learning a new language after the age of 10 rarely reach native-like proficiency (Hartshorne et al., 2018), this means that children are likely learning from models whose command of the language is less than ideal. This is not necessarily a deal-breaker — children can learn a language well even if the speakers they are learning from have high speech

error rates (Singleton & Newport, 2004) — but it likely impedes progress at least somewhat.

Similarly, while language textbooks are important for language courses, immersion schooling requires textbooks for other subjects (math, science, history, etc.) in the target language. Preschools need children's books, movies, music recordings and other content in the target language. These are all in short supply for Taiwanese indigenous languages, but it is unknown how much more is needed.

The effect of time spent in the language. In general, more time spent in a language will result in more learning, but the relationship is not straightforward. Bilingual-acquiring children spend half as much time in each language as a monolingual but learn almost as quickly (Hua & Hartshorne, in prep). How much is enough? O'Grady (2018) suggests that at least 25 to 30% of the total input to a child learner should be in the target language, or around 20 hours per week. This is far more than the 0.7 hours/week currently offered in Taiwanese primary schools, and substantially more than even time-intensive master-apprentice programs, which typically aim for around 5-10 hours per week (Hinton, et al., 2018a; McIvor et al., 2023; Olawsky, 2013). Perhaps not surprisingly, the limited quantitative work on master-apprentice programs suggest that apprentices do not become proficient speakers, even after several years (McIvor et al., 2023; Olawsky, 2013; Sherkina-Lieber, 2021). Even a more ambitious, 2-year immersion program of Mohawk averaging 19 hrs/week left graduates "stuck" at intermediate levels of proficiency (Green et al., 2018).

In principle, bilingual schools could reach the 20 hour/week threshold with 4 hours/day in the target language. Schools often provide substantially less (Dwyer et al., 2018; Todal, 2018). For instance, bilingual indigenous schools in Mexico actually only do an hour a day of the indigenous language, which is not the language of instruction (Hornberger & De Korne, 2018). One factor may be policymakers overgeneralizing from English, where a few hours per week can be more effective because students encounter English frequently in daily life outside of school (Todal, 2018). Policymakers may also underestimate the difficulties, because whereas Taiwan's indigenous languages are unrelated to Mandarin, many well-studied and widely-discussed stable bilingual societies (Quebec in Canada, Catalonia in Spain, Switzerland) involve highly related languages,

which provides a significant advantage to learners (Yun et al., 2023).

Immersion preschools in Taiwan are required to spend 50% of instructional time in the indigenous language, and thus are likely near the 20 hour/week threshold.¹ As already noted, primary schools provide less than 1 hour/week. This is clearly insufficient and needs to be increased. The question is, if 20 hours/week is impractical, just how much would be gained by each additional hour at the primary school level? It should be obvious from the review above that we are very far from being able to answer this question, but it is a critical one for educators and policymakers who are trying to balance different priorities.

A possible impediment to increased classroom time — particularly in primary and secondary school — is inflexible testing requirements. Taiwan's standardized exams are conducted in Chinese, so instruction in indigenous languages may be inconsistent with the goal of high scores. Similar issues have arisen elsewhere; for instance, national testing requirements implemented in the early 2000s in the United States made it difficult for schools to continue supporting native languages (Combs & Nicholas, 2012; Wilson, 2012).

The role of extra-instructional time. O'Grady (2018) suggests minimum of 20 hours/week includes all input, not just instructional time. Indeed, it stands to reason that language education will be most effective when students have the opportunity to use the language outside the classroom. This is, after all, part of the motivation for study-abroad language programs (this belief is probably justified, though data remain scanty; Isabelli-García et al., 2018). Conversely, evidence suggests that children who do not have opportunities to use the language outside of school will not master it (Genesee, 1978; Goalabré, 2013; Hornberger & De Korne, 2018; Ward, 2003; Wilson, 2018; Zahir, 2018). Indeed, Zahir (2018) reports anecdotally that students learning Lushootseed, an endangered member of the Salish language family, reliably forgot the language faster than they learned it because they had no use for it outside the classroom. Zahir (2018, p. 157) writes, "My mistaken assumption was that if [students] learn the language well, they would use it. This in fact is not the case. Language learning does

¹ In practice, it appears that not all immersion preschools come even close to this threshold (劉秋玲, 2018).

not lead to language use if there is no ... situation that necessitates speaking." Unfortunately, very often students in immersion programs for endangered languages do not have the opportunity to use the language outside the classroom. For instance, none of the households sending children to Breton immersion schools used Breton at home (Goalabré, 2013). Similarly, a study of children in Gaelic bilingual schools found that none used Gaelic with friends and hardly even with siblings, even those who otherwise spoke Gaelic at home (Goalabré, 2013). Since languages that children speak only with adults and not with their peers do not appear to be learned as successfully, this lack of usage among children is concerning.

The limited data we have for Taiwan show similar trends. 周宣辰 (2016) attributes limited success of indigenous immersion preschools in Taiwan in part to insufficient opportunity to use the language outside of school. A study of one immersion Paiwan preschool found that the children were spoken to in the target language outside of class only 20%-30% of the time by the parents, around 50% of the time by grandparents, and essentially never by siblings (Lin et al., 2022).

One possible reason that children in immersion programs for endangered languages do not always have much opportunity to use the languages outside the classroom may be because families with the least opportunities to use the endangered language in everyday life are sometimes the most motivated to enroll their children in immersion programs. For instance, students are more likely to enroll in immersion Gaelic schools in areas where Gaelic is less widely spoken (Stockdale et al., 2003). Similar results have been reported for Breton (Goalabré, 2013). Indeed, children in immersion schools are not always even from the traditional community: in Australia, half the children in bilingual programs in 2008 were not themselves indigenous, and thus presumably have limited opportunities to use the languages outside school (Walsh, 2018) (though the opposite was reported for Saami (Todal, 2018)). Whether these issues apply in Taiwan is unclear.

For these reasons, some organizations have focused on providing family and community experiences in the target language, such as vacation activities, language summer camps for families, language trips and expeditions to hot-pools, skiing, beaches, star observatories, sporting events, cafe groups, and play groups (O'Regan, 2018). While these seem like excellent ideas and are often well-received, it is unknown just how

many must be provided in order to be effective.

Limitations of scale. Of course, even if education is effective for individuals, it will not have much effect at the population level if few individuals receive the education. This has certainly been a limitation for Breton (the 14,082 pupils in Breton bilingual programs in 2011 accounted for only 1.5% of the school-age population) and Gaelic (only 2,316 students in enrolled in Gaelic schools in Scotland in 2011) (Goalabré, 2013). In Norway, only around 20 students are enrolled in South Saami immersion programs at any given time, out of an overall population of about 1,000 (Todal, 2018). Master-apprentice programs, where a learner spends 5-10 hours/week with a fluent speaker, are particularly difficult to scale up, and usually only involve a handful of speakers.

In Taiwan, a little over 1,000 children are in bilingual preschools (Fig. 1), compared to an overall indigenous population of about 580,000 (Government of the Republic of China (Taiwan), 2024). Another point of comparison is that while there are only 50-60 bilingual preschools, there are 2,166 elementary schools where at least 100 students are indigenous or 1/3 of the student population is (numbers compiled from government open data). From these numbers, it is clear that the bilingual preschools are only reaching a small fraction of the community.

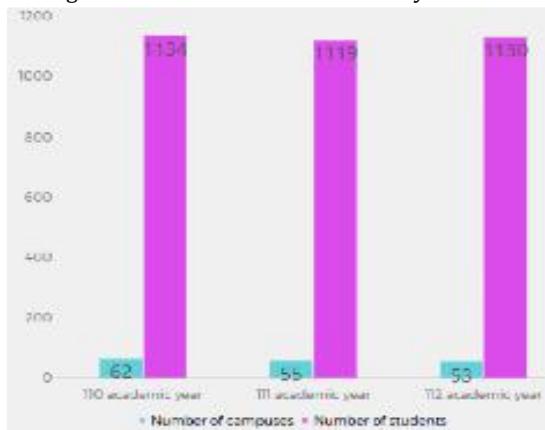


Fig. 1. Enrollment in indigenous language preschools in Taiwan has remained fairly steady in recent years. Data compiled from Ministry of Education (2024).

One question is how many schools are needed. Given the ongoing decline in Breton, Gaelic, and South Saami, enrolling only 1%-2% does little to move the needle. Is 100% enrollment required? Is there an inflection point, below which immersion programs are ineffective? Systematic comparison of immersion programs around the world, including those with high levels of enrollment such as Hawaiian, would be instructive.

Another question is what is driving the low enrollment rates: insufficient supply, insufficient demand, or something else. In the case of the South Saami, a critical factor is that the population is largely rural and spread over a wide geography, making it difficult to organize and deliver immersion education (Todal, 2018). In Taiwan, it appears that the large number of language communities causes similar problems, in that children must not just live near an immersion preschool but near a preschool providing immersion in their community's language. This is particularly challenging if families strongly prefer a school offering not just their language (1 of 16) but their dialect (1 of 42). For Breton, the issue of dialectal variation was addressed by only offering schooling in a standard dialect. However, this means that many students are learning a dialect that is not spoken in their community, making it difficult to put their classroom learning to use in the community (Goalabré, 2013). In such situations, parents may also be less enthusiastic about enrolling their children in schools that will teach them something that the parents do not view as their language. This likely applies in Taiwan, where tribes have reportedly resisted standardization of the languages.

One potential solution is distance learning: providing language education via video conferencing. This would come at considerable cost, in that remote schooling is generally inferior to in-person, as the world learned during the Pandemic. The South Saami experimented with providing language lessons via video (other subjects remained in-person and in Norwegian), but the result has been unsatisfactory (Todal, 2018).

Other socio-cultural factors. A number of researchers have suggested that language revitalization requires a lot more than teaching people the language and giving them opportunities to speak it (Wiltshire et al., 2024). For example, one widely-discussed phenomenon is that of receptive bilinguals or "silent speakers" — individuals who can understand a language well but do not speak it (Gessner et al., 2018; Schlegel, 2004; Sherkina-Lieber et al., 2011). The First Peoples' Cultural Council in Canada

has experimented with using Cognitive Behavioral Therapy, a clinical method that is effective for anxiety, to help silent speakers start speaking (Gessner et al., 2018).

Conclusions: A Call for Quantitative Research

The review above illustrates the problem facing educators, communities, and policymakers: there are far too many factors relevant to Taiwan's language revitalization goals to prioritize all of them, and in fact some are at cross purposes. For instance, what is the most effective tradeoff between increasing the supply of teachers and increasing training requirements (which typically decreases supply)? In choosing priorities, decision-makers have little more to go on than their own intuitions.

One thing is certain: The 40 minutes/week of indigenous language instruction in primary school is far too little. However, it is unclear exactly how much is needed, or whether any amount is sufficient without significant investments in language outside of school.

It would be helpful if the international experience with immersion schooling provided more quantitative insight. Fortunately, however, Taiwan is in an enviable position to conduct its own research: the large number of communities and the significant investment to date provides for natural experiments. Below, we list several low-hanging fruit:

- Factors influencing enrollment rates. A basic question is whether low enrollment in immersion preschools is due to lack of demand or lack of supply? If it is a lack of demand, what factors influence demand? If a lack of supply, where should the government locate additional preschools? A great deal could be learned from existing demographic information. Is enrollment higher in areas with many speakers of the heritage language or fewer? How many families live within a reasonable radius of an immersion preschool offering their heritage language? Just as important would be surveying parents who have elected not to enroll their children in order to understand why.
- Factors influencing immersion success. Preschools are no doubt differentially effective in promoting the heritage language. As reviewed above, potential reasons include such factors as amount of time spent in the target language, the training and fluency of the

teachers, and pedagogical methods. Detailing these factors and comparing to the fluency of the children would provide critical quantitative information useful for designing interventions. Care must be taken to factor out population differences, such as whether the children speak the heritage language at home. Note that such a study would require a standardized measure of fluency in the indigenous languages for 5-year-olds.

- Comparing immersion preschools with indigenous nannies. In addition to immersion preschools, Taiwan financially supports families who have their young children cared for in the home by indigenous language-speaking grandparents. An important question is which method is more effective for promoting fluency? Answering this question has implications beyond simply suggesting which program(s) should be prioritized: understanding differences in success may suggest ways of improving both systems.
- Measuring retention. The goal of the immersion preschools and indigenous nanny programs is not to have 5-year-olds speaking indigenous languages, but for those children to continue speaking the languages later. An important question, then, is whether the graduates maintain, lose, or improve their fluency once they enter primary school. Of particular interest is whether this varies depending on whether the child receives the 40 minutes/week of instruction in their heritage language offered in primary school.

Note that research need not be exclusively correlational: ongoing investments in language revitalization allow for controlled experiments. Given the rapid decline in Taiwan's indigenous languages, however, such research will have far more value if conducted now as opposed to later.

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石黑一雄《別讓我走》中的反烏托邦

呈現

高健毓*

國立政治大學

摘要**

本文旨在探究石黑一雄《別讓我走》(2005) 中的反烏托邦政治再現，透過國際關係理論的新馬克思主義觀點，剖析 20 世紀新自由制度主義，公共衛生優生學的倫理議題，筆者聚焦於小說中的複製人，即便有自己的意識及情緒，仍被人類豢養而提供移植的器官。即使學者曾在早先研究中，透過馬克斯主義探究歷史流變如何影響大國間的政治光譜，或者新自由制度主義在現代性及全球化的浪潮之下，如何增進人類經濟活動之福祉，亦或是新自由制度主義，回過頭使得貧富差距變大等議題已有著墨；但新自由制度主義下的優生學倫理議題，在國內人文學門中以及小說文本分析應用上卻鮮少被提及與應用。因此本文作者輔以反烏托邦小說裡人物之言說敘事、複製人的口述見證來勾勒二十世紀新自由制度主義下一體兩面中的善與惡，進一步點出新自由制度主義優生學政治光譜的可能不良後果。人類面對有如實驗室功能的寄宿學校，照顧並豢養著寄宿生，但實際上，他們是一群不被當作正常人類的複製人，只是一群提供器官移植的複製人。其最終結果，究竟是為人類集體公共健康帶來福祉，有如烏托邦一般促進社會繁榮；亦或反倒是造成倫理界線崩壞，進而使複製人器官成為財團利益下的犧牲品並被不當利用而犧牲，而導致反烏托邦的下場？再者，新馬克思理論的「孤立」與「疏離」概念符合小說中複製人被豢養著，集體與世隔絕，再再都點出人類以公共健康為名，行不法侵害生命權利為實，使得跨國生醫集團有機可趁。

關鍵詞：石黑一雄的《別讓我走》、複製人、反烏托邦、孤立、疏離

* 國立政治大學外國語文學院英國語文學系博士班研究生

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Dystopia Represented in Kazuo Ishiguro's *Never Let Me Go*

Peter Chien-Yu Kao *

National Chengchi University

Abstract **

This paper mainly scrutinizes dystopian consequences with the rise and invention of clones as the production under "neoliberal eugenics" in Kazuo Ishiguro's *Never Let Me Go* (2005). The problematic *reality presented* by "neoliberal eugenics" through technological advancement is understood and pointed out by many social science humanists as with irreversible consequences. The standpoint in this paper questions the relationship between clones and humans as part of sociopolitical schema. The research result will attest to moral boundary at the price of sacrificing clones' life so as to save humans'. The author intends to contextualize "neoliberal eugenics" that has dominated human public health for decades in order to project out the problematic reality forged by it. In IR theories, Neo-Marxism in terms of "estrangement," and "alienation" will be adopted to critique on "neoliberal eugenics." Based on Ishiguro's science fiction *Never Let Me Go*, this paper mainly critiques "neoliberal eugenics" under which clones serve as part of modernity project in medication. The author of this paper holds the ground that the invention of clones might not necessarily better humans' life, but instead impairs a certain relationship between clones and humans because the dystopian consequence—organs theft and trafficking—is unexpectedly to emerge. And clones serve as the source of

* Ph.D. student, Department of English, College of Foreign Languages and Literature, National Chengchi University

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surgical transplantation with organs extracted to humans. According to Kathy, Tommy and Ruth as "donors," the world turns out to be "dystopia." The author argues that the creation of clones serving and being prepared as organ donors will not only lead to the collapse of moral boundary between humans and clones, but also put humans into the emotional dilemma to treat clones in the formation of men. A fundamental ethical question is: Are clones humans?

Keywords: Kazuo Ishiguro's *Never Let Me Go*, clones, dystopia, estrangement, alienation

1. Introduction

Kazuo Ishiguro's *Never Let Me Go* (2005) begins with Kathy's announcement and accusation.¹

"My name is Kathy H. I'm thirty-one years old, and I've been a carer now for over eleven years. That sounds long enough, I know, but actually they want me to go on for another eight months, until the end of this year" (1).

For readers who completed the novel, they know that Kathy was once a "donor" before becoming a "carer." It is announcement from Kathy because she has transformed from a "donor" to the "carer" and she came to earn a last name, H. The newly earned last name might probably come from Hailshame for the sake of convenience to be identified by "the outsider." On the other hand, the quotation can be an accusation. Sarcastically, Kathy has been part of accomplice structure that helps justify the deed of the other carers. Her plain announcement does not seem to be fierce, but exerts the sounding impact on readers because they are all humans. The invisible and inhumane deed is conducted by humans in the novel. Meanwhile, it should also be noted that Kathy helps reduce and negate the other "donors" just like the once "she" being planned for providing fresh organs for transplantation. Fortunately, she survived as a donor and has done her work well as a carer.

Moreover, the third person plural form, they, is invisible, but powerful. It reminds readers of and indicates the shift of God's icon transmitted to the collective. Kathy with the other carers and those donors does not know exactly who stands behind. But the collective must be very omnipotent and omniscient. All-power and all-knowing God the image from the Hebrew civilization shifts to the collective, the unknown men. The strength is still overwhelming enough or more prominent than ever before. The accusation is deeply rooted in Kathy's plain statement. And the quotation indicates "the 'now' and 'actually,' the absorbed ordinariness, the vagueness of 'they' and the precision of 'eight months, until the end of this year,'" which are "the verbal mannerism of the public services sector in the humdrum

¹ It is Ishiguro's sixth novel, and Booker prize-winning heyday.

modern world" (1; Cusk 2011).² What is Ishiguro's political propaganda on neoliberalism and humans' organs transplanted? How can readers understand the relationship between "they" and the donors and carers of Hailsham? How is the image of dystopia represented through the interrogation of optimistic "neoliberal eugenics"?

In this post-modern milieu, science fiction (SF)³ gradually plays an important role in IR and international politics partly because its futuristic style/vision⁴ helps foresee and foreshadow the human condition with *dystopian/post-schools'*⁵ interpretations, and partly because SF predicts significant something that has not happened, but will seriously impact on men and the collective good if it emerges to impact. This paper mainly interrogates Kazuo Ishiguro's *Never Let Me Go* (2005) that questions the "neoliberal eugenics" based on which men's public health can benefit from raising "clones," a kind of life entities as a duplicate of men.

² Cusk, Rachel. "Rereading *Never Let Me Go* by Kazuo Ishiguro." *The Guardian*, Jan 29, 2011, www.theguardian.com/books/2011/jan/29/never-let-me-go-kazuo-ishiguro, Oct 31, 2024.

³ Science Fiction will be abbreviated as SF thereafter in this paper.

⁴ As Walter Benjamin suggests, "in modern life, these transitions ['these practices include rituals, myths, and narratives that help to orient the individuals as they undergo complicated transformations that undo and remake them as both individuals and as members of communities'" (Calarco 129).] are becoming ever more unrecognizable and impossible to experience" (Benjamin, Walter. *The Arcades Project*, trans, Howard Eiland and Kevin McLaughlin (Cambridge, MA: Harvard UP, 1999), 494.

⁵ The rise of neoliberalism coincidentally collided with the emergence of postmodernism. And the effect of the trend caused the public mistakenly embraced what they believed to be "the truth." As Rupert Read (Reader in Philosophy at the University of East Anglia) notes, Richard Rorty (American philosopher and educator at University of Virginia, 1931-2007), for example, "was deeply worried by the widespread but in his view fundamentally-mistaken equation between the questioning of tradition philosophy's 'quest for certainty' on the one hand and the assumption of a truly 'post-truth' politics on the other" (Read 2024). Read, Rupert, "Richard Rorty and How Postmodernism Helped Elect Trump," *The Philosophers' Magazine*, 2024, philosophersmag.com/richard-rorty-and-how-postmodernism-helped-elect-trump/, accessed on Aug 21, 2024. In other words, Rorty was concerned about the possibility of finding the truth for certainty on the one hand, but on the other worried about the probability for one to be deceived by the so-called truth (Rorty 1989). Rorty, Richard. *Contingency, Irony, and Solidarity*. Cambridge: Cambridge UP, 1989).

I would suggest, however, that "neoliberal eugenics" might not necessarily lead to a sounding utopian society; instead, the so-called men's public health might serve to meet the self-interest of dominant transnational elites, the medical connoisseur/professional, and the pharmaceutical tycoons identified to be "they" in sacrifice of men's collective good and rights.⁶

⁶ Similar phenomenon derived from democracy or so-called pan-democratic entities has been prevalent in history. In *Black Ghost of Empire: The Long Death of Slavery and the Failure of Emancipation* (2023), acclaimed historian Kris Manjapra argues that "during each of these supposed emancipations, black people were dispossessed by the moves that were meant to free them. Emancipation, ... simply codified the existing racial caste system— rather than obliterating it" (Manjapra 2023). Manjapra, Kris. *Black Ghost of Empire: The Long Death of Slavery and the Failure of Emancipation*. London & New York: Penguin, 2023. The British Academy. " *Black Ghost of Empire: The Long Death of Slavery and the Failure of Emancipation*," 2023, www.thebritishacademy.ac.uk/british-academy-book-prize-global-cultural-understanding/2023-british-academy-book-prize/black-ghost-of-empire-the-long-death-of-slavery-and-the-failure-of-emancipation/, accessed on Sep 1, 2024. On the other hand, Michael Billig (Emeritus Professor of Social Sciences at Loughborough University) argues that "[Through Hannah Arendt] as we know, what was fundamental for democracy was that there are shared facts, shared across the population. Without shared facts, democracy will be weakened, imperilled" (Billig 2021). Indeed, one who supports democracy and its value would always and almost mention that transparency of information and its circulation is the most valuable thing embedded. However, as Prof. Billig points out, Arendt was worried and reminds us. "The trend [in democracy] of turning fact into opinion" might turn out to be the scene in which "there will be no shared facts if everyone stands firm on his opinion." He does so because he thinks that he needs to defend his opinion instead of shared facts" (Billig 2021). Billig, Michael. "Donald Trump, Boris Johnson and Warnings from Hannah Arendt," *The British Academy*, Jan 27, 2021, www.thebritishacademy.ac.uk/podcasts/10-minute-talks-donald-trump-boris-johnson-warnings-hannah-arendt/, accessed on Aug 13, 2024. 6.

Deemed as "cultural artifacts" (Kiersey & Neumann 75), SF⁷ as the

⁷ Relevant primary texts, critical discussions and scholarly anthologies encompass: Rob Latham's 2014 edited *The Oxford Handbook of Science Fiction* (Oxford: Oxford UP); Mark Bould, Andrew M. Butler, Adam Roberts, and Sherryl Vint's 2009 edited *The Routledge Companion to Science Fiction* (London & New York: Routledge); Cornel West and critical race theory (2004); Dyer's question to the representative of "the human race" and identities of colored people" in 1997; Derrick A. Bell's 1976 & 1995a "School Desegregation Plan"; Sheree R. Thomas's *Dark Matter* (2000) and *Dark Matter: Reading the Bones* (2004); Nalo Hopkinson's *Whispers from the Cotton Tree Root: Caribbean Fabulist Fiction* (2000); Mark Dery's 1993 "Afrofuturism"; Alondra Nelson in 2002 "used it to challenge the notion of a future without race" (Bould, Butler, Roberts & Vint, 2009); Gwyneth Jones, *Deconstructing the Starships* (Liverpool: Liverpool University Press, pp. 6); Thomas Pynchon, *Gravity's Rainbow* (London: Picador/ Pan, 1975, pp. 758-60); Friedrich Hegel and Lisa Yaszek's philosophies of history in SF; C. Belsey's "Reading Cultural History," in T. Spargo's 2000 edited *Reading the Past: Literature and History* (London: Palgrave Macmillan); R. Charier's 1988 Cultural History: Beyond Practice and Representation, trans. L. G. Cochrane (Ithaca, NY: Cornell University Press); Bruce Sterling, *Schismatrix* (1985) (Harmondsworth: Penguin, 1986, pp. 70-80); Pat Cadigan, *Mindplayers* (New York: Bantam, 1987, pp. 4); Istvan Csicsery-Ronay, Jr.'s "Cyberpunk and Neuromanticism" in Larry McCaffery's 1994 edited *Reality Studio* (Durham & London: Duke University Press); Evans Arthur & Carol McGuirk (eds.)(2010). *The Wesleyan Anthology of Science Fiction*. (Middletown: Wesleyan University Press.); Kathy Acker's "Beyond the Extinction of Human Life" from *Empire of the Senseless* collected in McCaffery's 1994 edited *Reality Studio* (Durham & London: Duke University Press); William S. Burroughs' "Mother and I Would Like to Know" from *The Wild Boys*; Pat Cadigan's *Rock On*; Samuel R. Delany's *Among the Blobs*; H. G. Wells' *The Time Machine* (1895); J. G. Ballard's *The Drowned World* (1962); Joanna Russ' "When It Changed" (1972); Octavia Butler's *Kindred* (1979); William Gibson's *Neuromancer* (1984); Steffen Hantke's "Military Culture," Gregory L. Reece's "UFOs, Scientology, and Other SF Religions," Elizabeth Guffey and Kate C. Lemay's "Retrofuturism and Steampunk," Adam Roberts' "The Enlightenment," John Rieder's "Colonialism and Postcolonialism," Anthony Enns' "Pesudoscience" Andrew M. Butler's "Fururology," Colin Milburn's "Posthumanism," Lisa Yaszek's "Feminism," Neil Easterbrook's "Libertarianism and Anarchism," De Witt Douglas Kigore's "Afrofuturism," and Phillip E. Wegner's "Utopianism" in Rob Latham's 2014 edited *The Oxford Handbook of Science Fiction* (Oxford: Oxford University Press); and Christopher Daley, 2013.

production of nontraditional IR research archives⁸ not only subverts the traditional core value of IR, but also is seen as "immanent to a general social order" (Kiersey & Neumann 75). SF is provocative because it can "de-naturalize" or "de-normalize" a certain "social order" by "entrenching the expectations of social behavior upon which dominant ideologies of ... policy are founded... normalization is a form of power" (Kiersey & Neumann 75). SF serves the function in IR and politics as a certain self-reflective schema⁹ of "post-utopia" (Bleiker 2017; Ranciere 22) viewpoint to help examine the reality. SF's artistic contingency has been closely associated with Jacques Ranciere. Ranciere argued two trajectories as the representation of IR¹⁰ and politics social order. On the one hand, power exerted like Kantian concept of the "sublime as irreducible and heterogeneous presence at the heart of the sensible of a force that exceeds it" (Bleiker 2017; Ranciere 20). On the other hand, power "radicalizes the idea of the 'sublime,' contrasting it as an irreducible gap between the idea and the sensible" (Bleiker 2017; Gill 1993;¹¹ Ranciere 20).

⁸ Traditional IR research archives include: documents, statistics, speeches, interviews, rationality analysis and faculty of reason...etc. (Waltz 1979; Wendt 1999).

⁹ It should be noted that self-reflective schema in the era of postmodernism (Terry Eagleton; Judith Butler; Edward Said; Jean Baudrillard; Jean-Francis Leotard; Homi Bhabha; A. F. Levis; Michel Foucault; Julia Kristeva; Slvojo Zizek; Giorio Agamben; Jacques Derrida; Gilles Deleuze; Felix Guattari; Gayatri Spivak; Roland Bleiker) is imperative because it helps a). critique the contemporary political concepts that are held normative and politically correct, and b). provide a certain alternative interpretive angle to de-center the issue.

¹⁰ Jacques Ranciere's 2009 *Aesthetics and Its Discontent* talks about "Politics of Aesthetics" and "Aesthetics as Politics" (Ranciere 2009). The former draws the question about how the political/ IR event as reality is presented? Is the reality faithfully represented? Or is it fabricated in a manipulative way by political image or ideology? For example, the news concerning the accidental bombing during the Vietnam War raised a question: Was "that bombing accident" caused by Vietnam military men or by the US? "Aesthetics as politics" signifies a means that helps convey a certain political propaganda to the public through social media.

¹¹ According to Gill, identity politics in IR through technology advancement has been shown with bipolarity: domination and subordination, the oppressors vs. the oppressed, and inclusion and exclusion.

It is intended to explore the "neoliberal eugenics" context in which Ishiguro worked as a Japanese writer responding to or revolting against the taken-for-granted "utopian fantasy" as collectively shared value, norms and practices in terms of modernity in postmodern context based on *scientific innovation* of the day.¹² In this paper, one umbrella trope/thread that helps conceptualize the late 20th- and early 21st-century historical backgrounds includes optimistic "neoliberal eugenics" (Goodrow 137; Agar 1998; Sparrow 2010). *Never Let Me Go* by Ishiguro will be scrutinized based on this thematic category as focus for discussion.

2. Science Fiction in International Relations

The following dimensions illustrate the relations between SF and IR. First, SF manifestly eschews social criticism and supports the dominant ideology of bourgeois individualism" (Csicsery-Ronay 117). Value of bourgeois individualism is manifested through SF. In other words, SF serves the function of entertaining the bourgeoisie-class men to be shown as representation between the middle-class agency and its proletariat men in an unbalanced way. The apocalyptic foreshadowing for the collective formation of multinational domination is predicted to indicate the human condition on the international scale.

Second, the reasoning in the postmodern perspective is problematized by "neoliberal eugenics" and characterized by "sympathy"

¹² The material that deals with the illusion and hallucination of science of the day as a kind of representation of "utopian fantasy" can be found from the work of Alain Badiou. It is in *Being the Event* (New York: Continuum, 1988) that Badiou proposed "the disjointed temporal multiple" that subverts our understanding of the world we live in. As Badiou contended that "we are the contemporaries of a third epoch of science," it is the epoch of "a split, through which the very nature of... rationality reveals itself, as does the character of the decision of thought which establishes it" (Badiou 3). Similarly, in *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*, Fredric Jameson warned that "the consolidation of the emergent world market—for this is really what is at stake in so-called globalization—can eventually be expected to allow new forms of political agency to develop" (Jameson xii). It can therefore be inferred from Badiou and Jameson that we live in a world where the so-called reality projected out by science is always constantly changing. It is also a challenge to our perception towards the reality.

(Brecht 1943; Deleuze & Guattari 1975; Foster 1997).¹³ "Sympathy" evolves and is saturated with the ethical sentiment through which normative "ideology" and "narratives" (Gomel 95) are examined in *Never Let Me Go*. The dystopian world is chaotic and anarchic because clone technology is eventually in turn devastating to complex relations between clones and humans.

Third, it is believed that clone practices as technology development based on the "neoliberal eugenics" with its scientific reasoning and rationality can better human's life by organs transplantation. Organs transplantation is meant to heighten the quality of genes and improve men's health. However, how the utopian world has ironically transformed into the dystopian world is predicted to emerge by means of the "estrangement" and "alienation" that put human life and moral boundary both in controversy and danger. In fact, clones have their sentiment and emotion and so do men. Clones are created and raised like men, but are denied with the basic rights to live, which has become a major problem. Originally, it is believed that men can create a more liberal world that better their life through technology advancement. But it turns out to be the upside-down scenario as the opposite.

Fourth, as for feminists, the reality of eugenics created by male-centric liberals is problematic because the whole scenario is construed and dominated by masculine discourse that ideologically forges the arena of silent conflicts and confrontations. The oppressor (the Guardians and Madam in Hailshame in *Never Let Me Go*) and the oppressed (clones as organ donors) are in tension. And the included (Hailsham as fabricated) and excluded (the outer real world) are mostly in contradiction. The duality forged by male-techno discourses in turn undermines and threatens clones' certain individual voice and subjectivity in terms of self-determination towards their life.

These individual studies will be combined with an exploration of the scientific and technological modernity from postmodern understanding of "liberal eugenics" theories of the day. This perspective helps shape Ishiguro's responses to his own life conditions collectively shared as

¹³ According to Peter Boxall, Brecht's *Life of Galileo* in gaining a deeper understanding of the universe, presents that humankind forsakes their centrality to it" (Boxall 127).

commonality in postmodern IR context. The ways in which postmodern scientific conditions are presented will be analyzed in *Never Let Me Go*. How optimistic "neoliberal eugenics" associated with scientific rationality— one of the features of modernity and postmodern conditions— will be interrogated by Giddens, Harvey and Segal. And the other advances of the time which impacted on the understanding of clones' subjectivity will also be analyzed.

As the inherent Anglophone political and ideological tradition, "utopia" as representation of politically correct and dominant optimistic "neoliberal eugenics" in human psyche in terms of democracy, freedom and emancipation permeated from classic works. They include Thomas Moore's *Utopia* (1516), Robert A. Heinlein's *The Puppet Masters* (1951), Jack Finney's *The Invasion of Body Snatchers* (1954), Arthur C. Clarke's 1953 *Childhood's End* (64) and 1956 *The City and the Stars* (70) to the US's liberalism, grand strategy in "Liberal International Order (LIO)" (Stokes 2018: 133), John Christopher's *The Possessors* (1965) to William Gibson's 1981 (anti-)utopian story, "The Gernsback Continuum." Ishiguro is chosen because he best responds to utopian vision forged by Western Europe, which has become problematic, and he serves to deliver posthuman "sympathy" as part of neoliberal moral concern to those victims suffering from the impacts of idiosyncratically forged and collectively imagined utopia.

3. Neoliberal Eugenics in the Narrative

Is "neoliberal eugenics" problematic? If so, how is "neoliberal eugenics" problematic and transformative in clone technology and clone innovation and advancement of late 20th- and early 21st-century postmodern context (Giddens 1990; Harvey 1989; Lyotard 1985)?

Corresponding to David Harvey's¹⁴ and Anthony Giddens's¹⁵ interrogations on modernity and postmodern human neoliberal conditions, what this paper critiques on is the late twentieth and early twenty first century "neoliberal eugenics" as postmodern context in which Kazuo Ishiguro worked through human "sympathy"— to care oneself and those around him— and the ways in which the understanding of posthuman

¹⁴ As Harvey points out what Berman described, "There is a mode of vital experience— experience of... the self and others, of life's possibilities and perils— that is shared by men and women all over the world today. I will call this body of experience 'modernity' (Berman 15). This "modernity" project is problematic in multifaceted ways. For example, taking religion as an example, one might find that "modernity" according to Max Weber in his 1904 *The Protestant Ethic and the Spirit of Capitalism*, signifies the power between Catholic churches and nation states as a certain transition from "enchantment" (Weber 1904) to "disenchantment" (Weber 1904) while Emile Durkheim in his 1912 *The Elementary Forms of Religious Life* argued that "modernity" project lies mainly in the phenomenon: "the religious actors and institutions have become stripped away of their core value of social functions and they would gradually waste away" (Durkheim 1912).

¹⁵ Giddens in the introduction of *The Consequences of Modernity* defines 'modernity' in late twentieth century as "positively [trendy] to the emergence of a new type of social system (such as 'information society' or the 'consumer society')... moving from a system based upon the manufacture of material goods to one concerned more centrally with information" (Giddens 2). Jean-Francois Lyotard, as Giddens points out, argues that "[postmodernism or] post-modernity refers to a shift away from attempts to ground epistemology and from faith in humanly engineered progress. The condition of post-modernity is distinguished by an evaporating of the 'grand narrative'— the overarching 'story line' by means of which we are "placed in history as beings having 'a definite past' and 'a predictable future' The post-modern outlook sees a plurality of heterogeneous claims to knowledge, in which science does not have a privileged place" (Lyotard 1985).

body,¹⁶ human rationality and genetic displacement intersected with the development of clone advancement in Ishiguro's writings and his understanding of the sources of "clone and DNA" (Devolder 2008 & 2017). As suggested, the future for men will result in the predicted and futuristic "dystopian delusion and consequence." As Adam Roberts in "Technology and Metaphor" points out, "...the body has long been the repressed content of science fiction, as the genre obsessively substitutes the rational for the corporeal, and the technological for the organic" (Roberts 147). A close and textual-analysis reading of the vision of the transformation of "utopia"¹⁷ to "dystopia" provides an alternative interpretive way to delineating postmodern collective symptom— "eugenic rationality"— as part of human psyche that leads to dystopian consequences in Kazuo Ishiguro's writings. According to Csicsery-Ronay, Jr, Edward James & Farah Mendlesohn, the "'critical utopia' derives from certain ideas... in the tradition of Hegelian Marxism" (Csicsery-Ronay 117-8) and the transformation in Marxist viewpoints are deemed fundamental.

One's political identity is closely associated with the rights to his body. And the rights are derived from one's own free will. If he cannot control his body and decides the organ to be transplanted to another or not, the scene will become problematic whatever the reason might be for one's organ to be used for another's self-interest. One method that helps delineate the discourse of one's political body politics is through the narrative to present the reality. As for the conception of "narrativizing of reality" (Campbell 34; Devetak 187), "events acquire the status of 'real' not because they occurred but because they are remembered and because they assume a place in a narrative. Narrative is thus not simply a re-presentation of some prior event, it [has become] the means by which the status of reality is conferred

¹⁶ As for how humans face the existence dilemma in posthuman context through a certain reflection on science and technology, see Adam Roberts' 2000 *Science Fiction* (London & New York: Routledge). According to Scott Bukatman, as Adam Roberts points out, "...the body has long been the repressed content of science fiction, as the genre obsessively substitutes the rational for the corporeal, and the technological for the organic" (Roberts 147).

¹⁷ The tradition is embodied in the works of T. W. Adorno, Walter Benjamin, Ernst Bloch, Antonio Gramsci, Raymond Williams and Georg Lukacs.

on events" (Campbell 36; Devetak 187; Edkins 245-6).¹⁸ Relevant discussions has been designated with "11 September" taking place in the US. In terms of "narrativizing the reality," is "11 September," as Devetak questioned, conceived an act of terrorism? Is it a criminal act? Is it a kind of religious revenge? Is it a sort of blowback from the Middle East to the US.? Is it an instance of "Islam-Fascism?" Or is it a kind of "Clash of Civilization" (Samuel Huntington, "Clash of Civilization?"). "Did it happen at early morning when American Airlines flight 11 crashed into the north tower of the World Trade Center?" (Devetak 187). Cynthia Weber in 2002 made a similar argument, critiquing against the tenant of reality in terms of its political manipulation.

Moreover, Campbell also claims that "historical narratives" also "perform vital political functions in the present" (Campbell 31), and they can be used/ [seen] as resources in... political struggle" (Campbell 31).¹⁹ How post-Enlightenment thinking has been construed through modernity projects since the period of Enlightenment(Haraway 1991; Jameson 1980; Moylan 2000; Parrinder 2000). The post-Enlightenment thinking has begun in late 18th- and has been through 19th centuries in the works of Adam Smith; ²⁰ David Hume; Karl Marx; Robert Louis Stevenson. Next, how technology development in late 20th century has shaped our view to be politically correct and ideologically justified is questioned. Through political formations of "neoliberal eugenics" under optimistic liberalism and globalization theories, men, in turn, find negative impacts to human subjectivity. The notion that science brings the betterment of human life is likely to become an illusion and distortion.

Neoliberal viewpoint implicates how technology might help transform men's life. Neoliberal mindset is confirmed through individual "fitness"²¹

¹⁸ See Huntington, Samuel P. "The Clash of Civilizations?" *Foreign Affairs* vol. 72, no. 3, 1993, pp. 22-49.

¹⁹ See footnote 40.

²⁰ Shimshon, Ben (ed.) "Enlightenment Lectures 2002" *The University of Edinburgh & The Smith Institute*, 2005, 1-133, <file:///C:/Users/Star/Downloads/Enlightenment-lectures-2002.pdf>, accessed on Oct 2, 2019).

²¹ Welshman, John. (1997). "Eugenics and Public Health in Britain, 1900-40: scenes from provincial life," *Urban History* vol. 24, no. 1, 1997, pp. 56-75.

for society and nation's development. Neoliberal viewpoint pertaining to constructing utopian society and nation is through multifarious discourses such as urban history, public health, artificial intelligence, and posthuman studies. As John Welshman pointed out in "Eugenics and Public Health in Britain, 1900-40: scenes from provincial life,"

"It was not only the role of eugenicists of the social hygiene movement that has been recognized, but also the way that eugenic ideas shaped the outlook of... social reformers concerned in one way or another with the 'fitness' of the nation." (Welshman 56)²²

Individual "fitness" in Britain from 1900 to 1940 helped form a social milieu in which men were selected and labeled as part of generalized scientific schema. The generalized scientific schema is meant to enhance the so-called betterment of human life. However, the schema has overlooked the human senses, emotion and sentiment that might also be seen on clones in imitation of men.

Around half of a century later, some "neoliberal eugenics" has transformed in according with familial and household health. As a revisionist philosopher drawing on today's "neoliberal eugenics," Nicolas Agar argued that "... the 'new' liberal eugenics can avoid the repugnant consequences associated with eugenics in the past" (Agar 2004). Agar illustrates that "parents should be free to make only those interventions into the genetics of their children that will benefit them no matter what way of life they grow up to endorse" (Sparrow 2011). However, Agar's argument might be too far-reaching in terms of children's rights as individuals. The problem lies in a question: To what extent can parents 'be free' to "make interventions" for their children's genetics decision (Sparrow 499)?

²² Ibid, 56.

As Sparrow indicates, "Agar's attempt to distinguish the new from the old eugenics fails" because "once we start to consciously determine the genetics of future persons, we will not be able to avoid controversial assumptions about the relative worth of different life plans" (Sparrow 499). What Sparrow means is the unavoidability that men will designate different levels of "relative worth" that involves each "life plan" in order to judge the value of life from one to another. Such a naive view as Sparrow points out will not only return again to the old eugenics discourse, but also will help endorse one's life more valuable than that of the other and vice versa. In other words, the judgment might be very problematic.

In terms of the peculiar "contradictions of modernity,"²³ one might infer from the function of cloning technology that extends the reach of the human. Cloning technology helps "men to master their environment, and it also works to weaken the human itself as a category" (Boxall 127). Josie Gill in "Written on the Face: Race and Expression in Kazuo Ishiguro's *Never Let Me Go*" (2015) emphasized that Ishiguro draws on "an analogy between the lives of the clones and the experience of the racially marginalized, exposing the contradictions of contemporary genomic science in which race is being... effaced..." (Gill 844). Hal Foster, to explain this phenomenon, argued that cloning technology is a 'demonic supplement,' ... a 'magnificent extension of the body' and a 'troubled' constriction of it" (Foster 5). An array of concepts such as "demonic supplement," "magnificent extension of the body" and "troubled constriction"— all present the *problematic* dimensions of cloning technology(Foster 1997).

Moreover, Bertolt Brecht's 1943 *Life of Galileo* shows that Galileo's (supposed) invention of the telescope "allows humankind to reach far into space, to cast their influence way beyond the immediate parameters of the body..., but [men's] gaining deeper understanding of the universe, humankind forsakes their centrality to it" (Boxall 127). Men since then have become to know that the earth is not at the center of the universe, and that, in turn, "the universe is not constructed in accordance with human reason. To win the battle to measure our environment is to reveal that 'the

²³ See footnote 1.

earth is a planet and not the center of the universe, that 'the entire universe isn't turning around our tiny little earth' (Foster 53). As Peter Boxall concluded, "The desire for knowledge and control of the environment, which science and technology allow us to satisfy, leads, by a peculiar dialectic, to the loss of such mastery...The [cloning] technology that has allowed humankind to control the planet has also made it inhospitable to humans, and to all other species..." (Boxall 127). Therefore, as Boxall pointed out, "to think about science and technology in relation to the human is to recognize that [cloning] technology has a kind of posthuman logic built into it—a logic which arises in part from the philosophical fragility of the category of the human itself" (Boxall 128).

Although Hoda M. Zaki (1988) and Edward James (2003 & 2010) indicated "utopian" elements prevailing in SF, almost none of utopia SF novels have offered "the necessary coherent account of a superior and desirable alternative in the future" (James & Mendlesohn 219). Whether the transformations of optimistic "neoliberal eugenics" and globalized "utopia" becoming "dystopia" be that ideological linguistic dissimilation, religious separatism or even omission, cultural arbitrariness, and political antagonism, the neoliberal's human psyche to the development of technology has been problematized and transformative since the last two decades of the 20th century. In "Utopia and Anti-utopias," Edward James argued that readers need to understand what science fiction is "reacting against" and science fiction in IR draws on its interrogations on "another planet," or "the future" (James, & Mendlesohn 219).

James also pointed out a similar scenario of "utopia" whether it be the Catholic, Protestant or socialist. "Communal activities," as James claimed,

"within small village-style communities were crucial. Most utopias eliminated money and private property, thus at one stroke removing greed, theft, jealousy and most causes of civil strife. Reason and good will would be sufficient to provide space and harmony within the community..." (James, & Mendlesohn 220).

However, the argument of "reason" and "good will" based on humans' "fanatic rationality" is intended for a certain community. Whether it might be beneficial based on the starting intention that does good to the humankind, humans' "reason" and "good will" through Ishiguro's *Never Let Me Go*, however, might serve ultimate evil purposes and devastating

consequences because of the intension and self-interest that are manipulated by professional elites, authoritarian power and dominant institutions. The power that seeks to normalize clones proves oppressive and dangerous. When talking about norms, values, rituals and practices that have been passed down for generations, Michel Foucault reminds us: "Any entity of those mentioned above is politicized" (Foucault 1978).

As a result, those identified as nonconformists to scientific reasoning and human rationality will become victimized and marginalized. This happens because the collective sense is violent and forceful. Even worse is the scenario under which those nonconformists (i.e. those narrators/speakers/ characters in, for example, Miss Lucy²⁴ in Ishiguro's writings) lost their occupation, life, the mark as punishment by parasitic and pathological collective sense.

Edward James continued the two critiques on "utopian vision" arguing that "in reality many such utopias would turn out to be "dystopia," that is, oppressive societies, either because of the tyranny of the 'perfect' system over the will of the individual, or because of the difficulty of stopping individuals or elites from imposing authority over the majority, or, indeed, over minorities" (James & Mendlesohn 220). However, it is still not clear that how the pervasiveness of the notion of teconoculture based on modernity project as the "fanatic rationality" deeply seated in human psyche either properly explains the writings of writers since 1980s or how those writings have come to be interpreted.

As for the possible contestations against my thesis, they are also been noted. For example, Elana Gomel points out the problems of "ideology" and "narratives" in "The Contagion of Posthumanity: Alien Infestation and the Paradox of Subjectivity." Gomel asserts that the

²⁴ Miss Lucy is one of the guardians, who gives human education to those cyborgs and intend to make them look like humans. On one occasion, Miss Lucy reveals the "true function" of the cyborgs to give away their organs as the practices of completion. She is expelled by that boarding school, Hailsham.

posthuman²⁵ viewpoint focuses on "the difference" among each of the collective individuals and "the difference is simultaneously ideological and narrative" (Gomel 95). Ideology is a kind of sentiment embedded in politicized discourse on technology development. Even though this thesis attempts to provide an alternative interpretation to delineating the negative consequence of optimistic neoliberalism and optimistic globalized theories, it, still, is politicized. I do not deny it, but what I emphasize is to provide an alternative interpretive way for a certain interrogation on clone issues so that we might have different angles to look into how human's life in postmodern context has been shaped by "neoliberal eugenics" as a norm or concept of "fanatic rationality."

David Campbell, after Hayden White, explains that "narrative is central, not just to understanding an event, but in constituting that event" (Devetak 187). Narrative serves as a companion of witness and it helps not only the narrator but also readers of novels to understand the impact a particular event unfolds and forms. Narrative exerts influence and influence from both the text and from the external surroundings such as sociopolitical and socioeconomic entities triggers human emotions through five senses. Readers feel sympathetic because of the narrative as the text representation of the event. Readers feel panic because of the text. Narrative seems alive if it is put into what Michel Foucault mentions a specific historical context that in turn conveys significance. This process is what Campbell means the "narrativizing of reality" (Campbell 34).

Gomel distinguishes the meaning of "the difference" and affirms that "ideologically, 'the difference' is in tune with the paranoid, conspiratorial mindset..." And this kind of "paranoid" and "conspiratorial" mindset seeks to challenge "the formal structure of the alien infestation [that] dramatizes,... unintendedly, collapse of humanism when confronted with the ontological Other" (Gomel 95).

²⁵ Relevant "biological accounts" have shown in H. G. Wells's *The Time Machine* (1895), Olaf Stapledon's *Last and First Men* (1930), Arthur C. Clarke's *Childhood's End* (1953), Theodore Sturgeon's *More than Human* (1953), Sheri S. Tepper's *Grass* (1989), and Greg Bear's *Darwin's Radio* (1999). Some narratives consider posthuman in a technological sense, focusing on "the synthetic, engineered successors of humanity or the idea of humans and machines linked ever more closely in the circuits of technoculture (see Hayles; Bukatman)" such as Mary Shelley's *Frankenstein* (1818), Carel Capek's *R.U.R.* (1920), Bernard Wolfe's *Limbo* (1952), and Philip K. Dick's *Do Androids Dream of Electric Sheep?* (1968).

Stephen Zepke in 2012 "Beyond Cognitive Estrangement: The Future of Science Fiction Cinema" asserts that "science fiction is about the future" (Zepke 2012). Interestingly, "science fiction generally takes the future to be self-evident; the future is 'the day after tomorrow,' or another day more distant, but in any case on which the human struggle continues... Science fiction futures in this sense express our utopian hopes and dystopian nightmares, distilling in often spectacular visions what we see as best and worst about our present" (Zepke 2012). This arbitrariness creates what Suvin talks about the Neo-Marxist paradigm—"estrangement" and "alienation" (Bould & Mieville 2009; Canavan 2010;²⁶ Suvin 1972, 1979, 1983, 1988 & 2000). And as this thesis shows, the deeply seated human sentiment—"estrangement" and "alienation"—puts humans in dilemma and danger in terms of moral boundary and human sympathy.

4. Neo-Marxist Concepts: "Estrangement" & "Alienation"

As the narrator notes, "There are all kinds of horrible stories about [Hailsham]. Once, not so long before we all got to Hailsham, a boy had had a big row with his friends and run off two days later, up in those *boundaries*. His body had been found two days later..." (50). This excerpt points out the mystery of Hailsham. Those who run away the boarding school are seen as the misbehaved ones. The mysterious death of those who attempted to run away are held with association of their tragic end brought about by their own behaviors that should take to blame. As days have gone by, the mystery has been augmented as an alert to the donors who intend to run. The effect created by the mystery leads to what Neo-Marxist thinkers would call as "estrangement," and "alienation." Both qualities as Ishiguro implicates convey the problematic consequence that is opposed to the utopian vision of betterment and a promising future. In fact, the scene depicted above has been shown that the current moment in Hailsham already made those students uneasy and suspicious of their surroundings. Mystery creates more questions and suspicion. Behind "neoliberal eugenics," human rationality that seeks to better the health quality of men outside Hailsham has already made the students of the boarding school suffer a lot on the mental scale.

²⁶ See reviewsinculture.com/wp-content/uploads/legacy/reviews/23-RCTWinter2010CanavanBouldMieville.pdf

Human rationality through scientific advancement might create more problematic consequences (Hall 2009; Giddens 1990; Harvey 1989; Segal, 1985). The problematic consequences betray the faith of making public and collective good assumed in utopian vision and subvert the original scene of making people believe clone technology is absolutely promising. But how can readers understand and interpret the discourse of "neoliberal eugenics" scene in a more meaningful way? In advance, how can readers make sense the problematic consequences of "neoliberal eugenics"? Then, Darko Suvin's neo-Marxist²⁷ paradigm²⁸ (1979, 1983, 1988 & 2000)—"estrangement" or "alienation"—will be implemented during the process of the textual analysis of *Never Let Me Go* with secondary research materials (Gill 2014; Johansen 2016; Levy 2011; Teo 2014; Whitehead 2011). It is argued that "neoliberal eugenics" as part of schema of liberal optimism (Bell 2014; Carr 1940; Doyle 1983;²⁹ Jahn 2005 & 2013) and optimistic globalization theories are not necessarily beneficial, but prove problematic and negatively transformative to humans. Moreover, a close reading with textual analysis of *Never Let Me Go* will be conducted. Finally, it is proposed that each of our human subjectivity or personal individual self-identity can/ should not be defined or replaced by collectively normative scientific practices and innovative technology that tell us who we are.

²⁷ Fredric Jameson, Peter Fitting, Tom Moylan, Marc Angenot and Carl Freedam—all are neo-Marxist critics and theorists.

²⁸ "In 1973, Darko Suvin and R. D. Mullen founded *Science-Fiction Studies*, which was to become the primary venue for neo-Marxist criticism of science fiction" (Csicsery-Ronay 113).

²⁹ M Doyle's "Kant, Liberal Legacies and Foreign Policy" *Philosophy and Public Affairs*, vol. 12, no. 3, pp. 205-235 and 323-353, for example, points out that Immanuel Kant's optimistic liberal viewpoints serve as cornerstones that facilitate the formation of "dependency theory" through democratic, economic and political interactions in international community.

In this paper, Kazuo Ishiguro's³⁰ science fiction³¹ *Never Let Me Go*³² is implemented with Darko Suvin's neo-Marxist paradigm (1972, 1979, 1983, 1988 & 2000)(Bould & Mieville, 2009; Canavan, 2010)³³ — "estrangement" or "alienation"— and combing secondary research materials in order to vindicate my viewpoint. *Never Let Me Go* critiquing against "neoliberal eugenics" (Goodrow 137; Adorno & Horkheimer 2002; Agar 2004; Americans with Disabilities Act of 1990, 1991; Baynton 1996; Black 2003; Buchanan, Brock, Daniels & Wikler 2000). The critique has become the opposition against the optimistic "neoliberal eugenics" based on human rationality. The critique can reflect on the essence of "neoliberal eugenics" by those familiar with Ishiguro to his thematic discussion. It is argued that postmodern dystopian world filled with "estrangement" and "alienation"³⁴ (Suvin 1979, 1983, 1988 & 2000) is what we will make of it as futuristic (Adams 2000; Asimov 1996; Bell 1968; Butler,

³⁰ As for the introduction about Kazuo Ishiguro, see Cottenden, Jeff, "Kazuo Ishiguro," *British Council: Literature*, literature.britishcouncil.org/writer/kazuo-ishi-guro, accessed on Sept 30, 2019.

³¹ Since mid-1970, science fiction writers as Marxist critics such as H. Bruce Franklin, Philip K. Dick, Joanna Russ, Ursula K. Le Guin and Samuel R. Delany faced dilemma: "science fiction was generally held by educated readers to be artistically negligible; one the other, because the vast bulk of science fiction was written for mass entertainment, it manifestly eschewed social criticism and supported the dominant ideology of bourgeois individualism" (Csicsery-Ronay 117). Science fiction as "cultural artefacts" that made up the core of aesthetic theory in IR has been researched by Devetak, 2006; Franklin, 2005; Nexon & Neumann, 2006; Weber, 2013, & Weldes, 2003.

³² Ishiguro, Kazuo. *Never Let Me Go*. Faber & Faber, www.faber.co.uk/9780571258093-never-let-me-go.html, accessed on Oct 3, 2019. As for official film trailer, see "Never Let Me Go Featurette: Meet the Author," Sept 10, 2010, https://www.youtube.com/watch?v=t_gRhJ_Rwhg, accessed on Oct 15, 2019. Moreover, as for author talking at the interview, see "Kazuo Ishiguro Discusses His Intention behind Writing the Novel, *Never Let Me Go*" Sept 11, 2010, www.youtube.com/watch?v=jCB59pPG7k, accessed on Oct 2, 2019.

³³ As for Canavan's Neo-Marxist paradigm and his concepts embedded in how utopian world becomes the dystopian one, see <reviewsinculture.com/wp-content/uploads/legacy/reviews/23-RCTWinter2010CanavanBouldMieville.pdf>

³⁴ These two qualities are two of major fundamental concepts that constitute Neo-Marxist approach.

2014; Clarke 1962; Elkins 1979; Gabor 1964) and apocalyptic.³⁵ Even more is the scenario in which any form with disruption, rupture, disjunction and displacement (Bulter; Derrida; Foucault; Lyotard)— all challenge the technological hypothesis and taken-for-granted assumptions based on domestic collective choice and human rationality (Gilpin; Kissinger 2014; Mearshimer 2001; Morgenthau 1948 & 2006; Synder 2004; Waltz 1979).

Ishiguro implicated his critique against "neoliberal eugenics" concepts that were commonly held to be positively constructed to advance humans' life. In other words, the likely devastating consequences have not taken place, but it is noteworthy that the negative impacts of "neoliberal eugenics" concepts in terms of technology advancement (Baudarillard; Benjamin; Giddens 1990; Harvey 1989; Haraway 1991; Lyotard 1985) have exerted a certain relationship between humans and technology. And since science fiction helps displace and juxtapose the current moment and *future* direction in terms of time and space for human, it provides an alternative and distinct interpretive way to present the likely dilemma for humans.

Csicsery-Ronay Jr, mentions that Science Fiction Studies/ Utopian Studies devotees to two practical purposes: The first was to "identify recent works of SF³⁶ that could model the dual function of critical utopias... to criticize the status quo" and "to offer hopeful alternatives, thereby alerting

³⁵ In terms of the issue of "cyborgs" analyzed by different critical approaches, posthuman critics and scholars such as J. G. Ballard; Ruth Bleier's 1984 *Science and Gender: A Critique of Biology and Its Themes on Women*); Scott Bukatman (1993); Elizabeth Fee's "Critiques of Modern Science: The Relationship of Feminist and Other Radical Epistemologies"; Stephen J. Gould's 1981 *Mismeasure of Man*; Evelyn Hammonds' "Women of Color, Feminism and Science" collected into Ruth Bleier's edited *Feminist Approaches to Science* in 1986; Donna Haraway (*A Manifesto for Cyborgs*); Ruth Hubbard, Mary Sue Henifin and Barbara Fried's edited *Biological Woman, the Convenient Myth* in 1982; Evelyn Fox Keller's 1985 *Reflections on Gender and Science*; R. C. Lewontin, Steve Rose and Leon Kamin's 1984 *Not in Our Genes, Radical Science Journal and Science for the People*.

³⁶ Foremost SF works and writers encompass: Le Guin's *Dispossessed* (1974); Russ's *The Female Man* (1975); Delany's *Triton* (1976) and Marge Piercy's *Woman on the Edge of Time* (1976).

readers to potentially subversive works, and cultivating radical inspiration" (Csicsery-Ronay Jr. 120). Neo-Marxist standpoint (Darko Suvin 1972, 1979, 1983, 1988 & 2000) can better provides not only the room for "criticizing the status quo" but also the access to "cultivating radical inspiration" for readers.³⁷ As for theoretical framework, Darko Suvin's Neo-Marxist paradigms— "[cognitive] estrangement" (David Higgins & Roby Duncan, 2013; Nick Hubble and Aris Mousoutzanis, 2013) and "alienation" (Suvin, 1972, 1979, 1983, 1988 & 2000)(Bould & Mieville, 2009; Canavan 2010³⁸)— help criticize how the mindset of "neoliberal eugenics" is embedded within the narrative of *Never Let Me Go*. Neo-Marxist paradigms, in turn, entail the consequence of power relation shift³⁹ and devastates men's construction of utopia and its transformation into

³⁷ Before getting to know Neo-Marxist concepts, one should get a sense of what Marxism (Falk 1999, p.37; Gamble 1999; Marx & Engels 1977; Waltz 1959 & 1979; Wheen 1999) means how class struggle signifies the problematic dimension of "class struggle" (Falk 1999, p. 37; Gamble 1999; Marx & Engels 1977; Waltz 1959 & 1979; Wheen 1999) that defines the mobility of social structure as Kenneth Waltz called the "third-image" analysis (Linklater 2009, p.111) in IR and IP. In the mid-1840s, Marx and Engels claimed that "the main fault-line in the future would revolve around the divisions between... the national bourgeoisie that controlled different systems of government and an increasingly cosmopolitan proletariat" (Linklater 2009, p.111). The other facets of Marxism includes: "world-system with distinctive structures of hegemony, patterns of inequality and zones of resistance" (Linklater 1999, 134). As for the central core value of this thesis, the author intends to point out how Neo-Marxist concepts— "estrangement" and "alienation"— serve to explain a kind of human conflicts foreshadowed in the future, which is inevitable because of men's self-complacency to an attempt of control of technology.

³⁸ See <<http://reviewsinculture.com/wp-content/uploads/legacy/reviews/23-RCTWinter2010CanavanBouldMieville.pdf>>

³⁹ In terms of "power relation," since the mid twentieth century, a great bunch social, political and philosophical thinkers and scholars from different approaches have critically analyzed how power has been negotiated, mediated and exerted to influence each agent/ political actor/ unit in a structure of international community. They include but are not limited to: Michel Foucault, Giorgio Agamben, Judith Butler, Julia Kristeva, Slavojo Zizek, Strauss Levinas, Gilles Deleuze, Felix Guttari, Carol J. Adams, Edward Said, Homi Bhabha, Louis Althusser, Terry Eagleton, Ronald Bleiker, Robert Cox, Stephen Gill, Jenny Edkins, Martin Griffiths.

post-utopia or dystopia (Csicsery-Ronay, James, & Mendlesohn 2003 & 2010; Teo 2014; David Higgins & Roby Duncan 2013; Nick Hubble and Aris Mousoutzanis 2013). As Csicsery-Ronay Jr acknowledges, "science fiction and the closely related genre of utopian fiction have deep affinities with Marxist thought..." (Csicsery-Ronay Jr 113). From Marxist viewpoints,

...science fiction and utopian have been concerned with imagining progressive alternatives to the status quo, often implying critiques of contemporary conditions or possible future outcomes of current social trends. Science fiction... imagines change in terms of the whole human species, and these changes are often the results of their own social evolution. These are... the concerns of the Marxist utopian and social imagination." (Csicsery-Ronay Jr 113)

Moreover, in Stephen Gill's edited *Gramsci, Historical Materialism and International Relations* (1993), he points out the function of Marxist paradigm and it serves to scrutinize "the political use (and abuse) of history, and political myth: myths of national origin and identity, and myths about human potential..." (Gill 13). Marxist thinkers acknowledge the function of history with the rise of modernization projects. Since then struggle projected out by inequality has prevailed everywhere. Marxist paradigm also involves the relationship between "hegemonic discourses and the principles of inclusion/ exclusion and supremacy/ subordination⁴⁰..." (Gill 14) in order not to view the issues such as political use, political dominance, collective sense of nationalistic ideology or ideological apparatuses as simply a sort of "juxtaposition...of equation of progress with the spread of liberal, post-enlightenment political/ economic rationality" (Gill 14-5).

⁴⁰ The relation between the guardians/ Madame and those cyborgs as organ donors exists within the duality of supremacy and subordination.

In Kazuo Ishiguro's *Never Let Me Go*,⁴¹ having served her position for twelve years, Kathy H., the narrator, is looking after the donors.⁴² Kathy is herself a donor and later a carer, which makes her position paradoxical. It is partially because a carer might be the one who survived. She survived from being a donor giving away the organs to those who are in need. But she still faces the uncertainty of being a carer. Kathy feels that the atmosphere in Hailsham is weird, but she is unable to identify to what extent the reality is deemed strange. What she merely knows is her role that assists the other Hailsham students *complete their missions*. Kathy reminisces the time spent in Hailsham (Ishiguro 5), a boarding school in England. For readers, Hailsham seems *secluded*.⁴³ Hailsham does not have any contact with the exterior world (Ishiguro 50). Those teachers as guardians and carers, and students as donors are seemingly meant to be kept confined in Hailsham. The teachers are guardians. And they are implicated by Ishiguro to be portrayed as those who listen up to the "elites" who set up *the rules* behind and *how those students are selected to be organ donors*.

⁴¹ According to Jeff Cottenden at online *British Council: Literature*, he wrote that Kazuo Ishiguro was born in Nagasaki, Japan on 8 Nov 1954. Ishiguro came to Britain in 1960 as his father began conducting his research at the National Institute of Oceanography. Ishiguro then received education at a grammar school particularly for boys in Surrey. See <<https://literature.britishcouncil.org/writer/kazuo-ishiguro>> (Accessed on Oct 12, 2019). Ishiguro was awarded the Nobel Prize for Literature in 2017. The Swedish Academy praised Ishiguro's works for "unearthing 'the abyss beneath our illusory sense of connection with the world. [In terms of Ishiguro's choice of techno novel and science fiction,] if his novels tend to defy genre expectations, with each new work veering from the conventions of the last, what haunts all of them is the abyss of memory and its potential to shape and distort, to forget and to silence...'" (Cottenden, *British Council: Literature*).

⁴² Kathy, according to the novel plot, is the last survivor as organ donor in Hailsham. She recounts the story as witness disclosing the "alienated" relations among her colleagues and silently criticizing how clones in the formation of men have suffered and have been regarded as machine without emotion and sensitivity. But those clones like Kathy, Tommy and Ruth are like humans. They form friendship, look after each other and go on adventure as teenagers.

⁴³ What one can perceive Ishiguro attempts to do is his portrayal of high-techno environment which is distant from human's material world.

The children are watched closely, *educated* and *persuaded repetitiously* that they need to keep themselves healthy and to fruitfully produce art pieces chosen by Madame for exhibition in a gallery(29, 32 & 42). As Tommy said, "There's something else," ... he went on, "something she [one of the guardians in Hailsham] said I can't quite figure out..." (29). In other words, for those students, they are persuaded to be *as normal as humans* living in the material world as hidden agents even though they look secluded and it might arouse others' attention. Developing friendship with Ruth and Tommy, Kathy grows fondness of Tommy, attending him when he is bullied. Readers get a sense of regarding Ruth, Tommy and Kathy just like real humans forging a bonding relations with other students despite the fact that all of them are clones, as half human and half machine.

They are still like humans with a sense of belonging with their companions. Kathy quite often confides with Tommy, but Tommy and Ruth form a relationship instead. Before Kathy and Tommy formed relationship, Ruth confided what she had down to Kathy and Tommy. And as for the reality of Hailsham for those students, one time, Miss Lucy (40-1), one of the guardians, accidentally reveals that Hailsham's children are raised as clones expected to donate their organs to others so that is why their colleagues usually die young while another guardian, Miss Emily, when teaching counties of England seems to erase introducing Norfolk where Kathy keeps her own memory with Tommy (64-5). Kathy even mentions that in her memory she lost a tape with the album called "Songs After Dark" by Judy Bridgewater (64-5). This sense of loss is almost equal to a kind of loss of self-identity in posthuman context as textual interpretation. As Kathy recalls, "The album's called Songs After Dark and it's by Judy Bridgewater. What I've got today isn't the actual cassette, the one I had back then at Hailsham, the one I lost..." (64). "What was so special about this song?... And what I'd imagine was a woman who'd been told she couldn't have babies, who'd really really wanted them all her life" (70).

Before long, Miss Lucy is removed from school because of her disclosure and those students continue their fate passively (68, 69 & 81). As Miss Lucy expressed, "The problem, as I see it, is that you've been told and not told. You've been told, but none of you really understand, and I dare say, some people are quite happy to leave it that way. But I'm not" (81). Even more affirmative is Miss Lucy's announcement that seemingly questions the core value of liberal eugenics. She said, "Your lives are set out for you. You'll become adults, then before you're old, before you're even

middle-aged, you'll start to donate your vital organs. That's what each of you was created to do" (81).

It is not until at the age of 16, Kathy, Tommy and Ruth move to Cottage and this is the first time they are permitted to be in connection with what it looks like as the outside world (115). Later, some say that an older woman in resemblance with Ruth might be the one who will get organ donation from Ruth. Moreover, a rumor indicates that for those who fall in love as a couple and are recognized by their artistic creation with token given will be able to defer the "completion of donation." The factual scene is that the resemblance to Ruth is not true, which made Ruth furiously wonder if those children are being cloned to "human trash." More importantly, Ruth endeavors to find her "possible" that is said to be the potential genetic source for organ-donating clones. However, it eventually turns out to be the case that they might not be duplicated from decent people, but are actually cloned from prostitutes or drug addicts.

Tommy at the same time develops a theory (193). It is believed by Kathy and Tommy that Madame collected those students' art to determine who are in true love. Upon hearing this, Ruth takes a chance to tell Kathy that Tommy would never fall in love with Kathy because of her sex relation with the other men. Quite soon, Ruth's first donation goes badly and her health deteriorates rapidly and Kathy becomes Ruth's carer. Both become aware that Ruth's donation will probably be her last. A trip among Ruth, Kathy and Tommy is proposed by Ruth and during which Ruth expresses her regret for intending to part Kathy from Tommy away (200, 201, 231 & 232). When Kathy describes the process and effects of the completion of organ donation, she mentions that

You could even say it's brought the best out of me. But some people just aren't cut out for it and for them the whole thing becomes a real struggle. They might start off positively enough, but then comes all that time spent so close to the pain and the worry. And sooner or later a donor doesn't make it, even though, say, it's only the second donation and no one anticipated complications. When a donor completes like that, out of the blue, it doesn't make much difference what the nurses say to you afterwards, and neither does that letter saying how they're sure you did all you could and to keep up the good work. For a while at least, you're demoralized... (207)

Kathy's narrative in terms of the process and consequence of organ donation haunts readers. By distance and concealment, guardians and Madame attempt to educate Hailsham's students to be like real humans, but they are not humans. Paradoxically, they have human emotions. Those prepared organ donors feel delighted, desperate and despondent just like humans.

Later, Kathy also becomes Tommy's carer and both form an intimate relationship(237). Instigated by Ruth's last wish, Kathy and Tommy go to Madame's house and bring Tommy's art piece to prove that they are in true love(235). Both happen to meet Miss Emily, who is their former headmistresses. Later, Madame and Miss Emily reveal that the responsibility the guardians take is to give the clones human education and the exhibition at the gallery is meant to convey a certain image to the outside world that the clones are normal humans with a soul and deserve better treatment (262).

"Tommy had to re-do three of the tests. This had left him feeling pretty woozy" (246). Finally, this clone experiment fails and the school closes while Kathy resigns as Tommy's carer until his completion of donation. Kathy, thereafter, drives up to Norfolk and fantasizes what she remembers and everything she lost.

5. Conclusion

What this thesis argues is that scientific and technology development—the creation of clones as organ donors— might prove as the dystopian and apocalyptic in terms of moral boundary between humans and clones. Through Kathy's, Tommy's and Ruth's narrative, readers feel the panic first-hand experience that defines the reality and humanity. Each individual's self-identity is mobilized with his own voice that creates subjectivity. The theoretical framework is Neo-Marxists' concepts—"estrangement," and "alienation." It is expected that this paper will shed a new light on the study of postmodern technology development in posthuman context. This paper provides as an alternative interpretive analysis and understanding of "the tradition of scientific reasoning." "The tradition of scientific reasoning" has been seeing optimistic "neoliberal eugenics" as the foreground of utopia world in political or cultural entity. This utopia world is problematically constructed and dominated by clones' organ donation to human. The plausible concept is backed up by scientific rationality, liberal development, and modernity projects—all tend to

overlook the issue of sympathy and emotion entities that those clones are, like human, endowed with. Meanwhile, some of these impacts are not to do with long-standing cultural traditions but within the specific conditions of life in an modernizing, urbanizing and industrializing modern society in late 20th and early 21st centuries. Compellingly, such modernized conditions, particularly those as inner and intimate human body, brain, and mental states, are retrospectively integrated into a broader horizon of cultural schema.

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Address for Correspondence

Peter Chien-Yu Kao
 Department of English
 National Chengchi University
 No. 64, Section 2, Zhinan Rd.,
 Taipei City 116, Taiwan (R.O.C)

appleskykid666@gmail.com

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越南語動詞「đi」（去）：語法化的歷史

階段

裴氏碧銀^{*}，謝菁玉^{**}

國立成功大學

摘要

本研究探討了越南語動詞「đi」（去）在語法化過程的一個歷史階段，特別是在古典作品中的演變。我們旨在回答以下的研究問題：(1)「đi」除了其核心意義「去」之外，還發展了哪些獨特的意義？(2)「đi」是否存在和其他語言不同的語法功能？研究結果顯示：(a)「đi」在三個構式中表示離開/消失、手段和意圖。像「đi lại」（去來）和「đi đi lại lại」（去去來來）這樣的固定語式中，「đi」表達關聯性和互動性的意義。(b)「đi lại」（去來）能表達人際關係，是其獨特的語法功能。此外，與英語的「be going to」不同，越南語的「đi-VP」結構不能用於表達未來的認知形態。本研究通過對特定歷史階段的分析，增進了對越南語動詞「đi」語法化過程的理解。這個階段的「đi」從表示物理移動的動詞發展出更廣泛的意義，具獨特的語法功能。

關鍵詞：越南語，動詞「đi」，語法化，模態，動態動詞

^{*} 國立成功大學外國語文學系碩士生

^{**} 國立成功大學外國語文學系教授（通訊作者：shelley@ncku.edu.tw）

The Verb *Đi* (Go) in Vietnamese: A Historical Stage of Grammaticalization

Bui Thi Bich Ngan*, Shelley Ching-Yu Depner**

National Cheng Kung University

Abstract

This study examines a stage in the grammaticalization of the Vietnamese verb *đi* 'go' in classical works, highlighting its evolution from a verb denoting physical movement to one with broader meanings and functions at a historical stage. We aim to answer the research questions: (1) What grammatical functions has *đi* developed beyond its core meaning of 'to go'? and (2) Is there any unique grammatical function of *đi* that is not found in the languages reviewed? The results show: (a) Three constructions of *đi* indicating moving away/disappearance, means, and intention. Fixed expressions like *đi lai* 'go come' and *đi đì lai lai* 'go go come come' illustrate *đi*'s development in expressing relational and interactive aspects. (b) The unique use of *đi lai* 'go come' to express interpersonal relationships marks a distinctive grammatical function. Additionally, unlike the English *be going to*, the *đi*-VP construction in Vietnamese does not exhibit the deontic or epistemic modality used to express future intentions. This study provides the understanding of the initial steps of grammaticalization of *đi* 'go' in Vietnamese and contributes further research into its continued grammaticalization.

Keywords: Vietnamese, the verb *đi*, grammaticalization, modality, motion verb

* MA student, Department of Foreign Languages and Literature, National Cheng Kung University, Taiwan.

** Professor, Department of Foreign Languages and Literature, National Cheng Kung University, Taiwan. (corresponding author: shelley@ncku.edu.tw)

1. Introduction

The grammaticalization of the verb *go* in English has been investigated by numerous researchers (Wu et al. 2016; Bourdin 2008; Hoppe & Traugott, 2003; Tagliamonte et al. 2014). In addition, the investigation of the verb *go* across languages is evident in research by Bilmes (1995), Yi and Ogawa (2024), Bravo (2014), and Botne (2006).

In Vietnamese, the verb *đi* 'go' is among the most frequently used movement verbs and has evolved to encompass various meanings over time (Nguyễn 2023).¹ According to the Vietnamese dictionary (Hoàng 2002), there are a total of 18 meanings for the verb *đi* 'go' in Vietnamese. Furthermore, its dominant meaning of motion, *đi* 'go' also develops various other meanings. Nevertheless, studies on its grammaticalization remain limited, which motivates this study to further investigate its developmental stages, with a particular focus on the semantic shifts involved.

To explore the grammaticalization process of the Vietnamese verb *đi*, it is crucial to use a corpus covering a long historical period with diverse data. However, a comprehensive Vietnamese corpus is not available. Therefore, we use historical documents to build a relevant corpus for our study. The following research questions guiding our study are: (1) What grammatical functions has *đi* developed beyond its core meaning of 'to go'? (2) Is there any unique grammatical function of *đi* that is not found in the languages reviewed?

The remaining sections of this paper is organized as follows: Section 2 reviews the related literature, providing a theoretical and empirical foundation for the study. Section 3 outlines the research methodology, detailing our data sources. Section 4 presents the data analysis, showcasing our findings on the various grammatical functions of *đi*. Section 5 discusses the distinct structure and future modality of *đi*. Finally, Section 6 concludes the study, summarizing key insights and suggesting directions for future

¹ We received the first reviewer's comment on the initial submission: "Vietnamese people do not typically address each other by their last name. Therefore, to follow international standards, the last name should be written first, followed by the given name, allowing readers to recognize the author". As a result, the citation style may lack consistency.

research.

2. Literature Review

In this section, we will examine the evolution of the verb *go* in English, Mandarin, and Thai. Referring to grammaticalization processes of *go* in other languages can inspire us to look into Vietnamese *đi*. Moreover, the grammaticalization of some Vietnamese verbs are reviewed.

2.1. The Grammaticalization of *Go* in English, Mandarin Chinese, and Thai

The grammaticalization of *go* in English has gradually developed into a marker of future tense. Sweetser (1990) indicated that within the historical process of grammaticalization, epistemic modality emerges from deontic modality. According to Yi and Ogawa (2024), in its initial usage during the late 16th century, *be going to* primarily conveyed the idea of directional movement. However, by the early 17th century, it started to convey the modal concept of future obligation with intention. In the mid-17th century, it expanded its meaning to include the epistemic modal sense of prediction, primarily with non-living subjects. By the early 18th century, this usage extended to include a wider range of syntax and animate subjects, further emphasizing its predictive function. Let's now turn to compare the grammaticalization of *go* in English with two languages in Asia: Mandarin *qu 'go'* and Thai *paj 'go'*.

Studying Mandarin, Yang, X (2015) examined the development of *lai* 'come' and *qu 'go'*, noting that *qu 'go'* evolves into an intransitive verb, meaning it no longer requires an object. As *qu 'go'* becomes more commonly used, it shifts to a "low transitivity" role, indicating the meaning of reaching a destination. On the other hand, Yi and Ogawa (2024) compared the English *be going to-VP* with similar constructions in Mandarin, such as the *qu-VP 'go-VP'* and found no evidence to suggest that the Mandarin verbs *qu 'go'* and *lai 'come'* have grammaticalized into modal auxiliaries with root modal meanings.

In Thai, the verb *paj 'go'* has been examined by various linguists too. Bilmes (1995) explored grammaticalization of *paj 'go'* and identified four distinct functions of *paj 'go'*: as a main verb, a prehead verb, a prehead, and a posthead. Another study by Thiengburanathum (2013) on the Thai motion verbs *paj 'go'* and *maa 'come'* found that these verbs can indicate conditions in various domains, such as space, time, and attributes, based

on the surrounding linguistic and pragmatic context.

We expect that the grammatical development of the Vietnamese verb *đi* 'go' will have more similarities with Mandarin and Thai but less with English *be going to*, because Vietnamese shares structural similarities with Mandarin and Thai.

2.2. The Grammaticalization of Vietnamese Verbs

There are several researchers who have examined the grammaticalization of Vietnamese verbs. In this section, we review the grammaticalization of the Vietnamese verbs *cho* 'give' and *được* 'acquire' due to its similarities with *đi* in certain constructions.

Nguyễn, Thu Trang (2021) investigates the grammaticalization of *được* 'acquire positively'.² The study reveals that *được* has evolved to include meanings of passivity, possibility, permission, and preference through mechanisms like metaphor, analogy, metonymy, and reanalysis. Thepkanjana and Ruangmanee (2015) also studied *được*, finding its development from 'acquire' to express ability, possibility, and permission, primarily driven by metonymy.

Mueanjai and Thepkanjana (2009) explore the semantic expansion of the Vietnamese verb *cho* 'give', beyond its original meaning of "to transfer possession". It has been noted that the grammatical extensions of *cho* 'give', which are also found in corresponding verbs in other languages, involve 1) dative-marking, 2) benefactive and malefactive-marking, 3) causative-marking, and 4) purposive-marking. On the other hand, the lexical extensions unique to Vietnamese include 1) placing something into a container and 2) offering an opinion.

Given the limited research on Vietnamese verb grammaticalization especially on the verb *đi*, these findings provide a foundation for our exploration of how it undergoes semantic and grammatical shifts. The following sections will examine the development of its meanings and structures as part of *đi*'s grammaticalization.

² The translation of the verb *được* into the verb phrase 'acquire positively' may reflect the author's intention to highlight the positive meaning of the verb.

3. Research material and the data collection process

This study traces the grammaticalization of *đi* in Vietnamese literature from the 13th to the 20th century. Chữ Nôm, a Vietnamese script, emerged around the 11th century (The Holyland of Vietnam Studies). Before Chữ Nôm, Vietnamese used Chữ Nho, which adapted Chinese characters to Vietnamese pronunciation. Our corpus spans from the 13th century Chữ Nho texts to the 20th century.

Three historical literary works have been selected for analysis. They are: *Hịch tướng sĩ* 'Call of the Soldier' (1284), *Quân trung từ mệnh tập* 'Letters and Commands during Military Service' (1423), and *Nỗi buồn chiến tranh* 'The Sorrow of War' (1990).

Hịch tướng sĩ 'Call of the Soldier' was written in year 1284 by the prince, Trần Quốc Tuấn, also known as Great King Hưng Đạo, aims to "encourage soldier spirit, gathering national united power" (Trần 2018, p. 638) before the second resistance war against the Mongols. We chose Huệ Chi's translation for data analysis as the translator is a linguist specializing in ancient, medieval, and modern Vietnamese literature.

Quân trung từ mệnh tập 'Letters and Commands during Military Service' written in 1423 by Nguyễn Trãi, a national hero of Vietnam, includes correspondence between Lê Lợi and Ming generals. We selected this version due to its clear layout and citation of the original source.

Nỗi buồn chiến tranh 'The Sorrow of War', a novel by Bảo Ninh published in 1990. This novel, translated into multiple languages worldwide, narrates a soldier's reflection on his past while gathering fallen companions' remains. This novel is available online with a clear chapter-by-chapter format, allowing us to navigate the content more easily.

These works will provide material on how *đi* was employed linguistically and contextually during the historical period from the 13th to the early 20th century. The three works are abbreviated as below in order to be presented in section 4 (Data analysis).

- HTS: *Hịch tướng sĩ* 'Call of the Soldier' was written in year 1284.
- QTTMT: *Quân trung từ mệnh tập* 'Letters and Commands during Military Service' was written in year 1423.

- NBCT: *Nỗi buồn chiến tranh* ‘The Sorrow of War’ was published in Vietnam in 1990.

Since there is no existing Vietnamese corpus that provides historical data for tracking the development of *đi*, these three chosen works will span different historical periods to give an overview of its linguistic evolution.

To compile a self-built corpus, each literary work, originally in web format, will be converted into PDF format to maintain the original layout, as some works are in the form of traditional letters on the website. Subsequently, AntConc (version 4.2) is used for text analysis, enabling the extraction of *đi* frequencies, collocations, and contextual usage. First, each historical text file is loaded into AntConc, where we search for the keyword *đi*. We then copy the sentences containing *đi*, along with their right and left contexts, into a single PDF file, capturing relevant collocations. Finally, the extracted data from individual works will then be summarized into a consolidated Excel spreadsheet for grammatical development analysis. A detailed analysis is then conducted on high-frequency occurrences and unique meanings.

4. Data analysis

In this section, we will explore lexical meanings and the grammatical development of *đi* over time. According to *Từ điển tiếng Việt* (Vietnamese Dictionary) published by Vietnam Lexicography Centre (Hoàng 2002), there are a total of 18 lexical meanings associated with this verb. These meanings are detailed in other Vietnamese dictionaries and are foundational reference adopted by numerous researchers.

We first examine the lexical meaning of *đi* because it serves as a starting point for understanding its grammaticalization. By grasping its original usage, we can better appreciate how *đi* has evolved into various grammatical roles and functions over time. *Đi* denotes movement or travel, reflecting one of its core lexical meanings as our example (1) below shows. Hoàng, Phê (2002, p.331) describes one of the fundamental meanings of *đi* as a self-moving action, characterized by successive motions of the legs, where one foot is always on the ground while the other is lifted and placed elsewhere.

(1) Bây giờ ông phải đi đến rừng thông (NBCT, 1990, p.125)

'Now he had to go to the pine forest'

In (1), *đi* is used to indicate the physical act of moving towards a destination (*Rừng thông* 'the pine forest'). The primary function of *đi* here is to describe the action of going from one place to another.

In the current study, however, we will not delve further into the lexical meaning of *đi*, but rather focus on its grammatical development, so as to explore the evolution of *đi* within the historical process of grammaticalization in Vietnamese literature. The grammaticalization of *đi* has developed into various meanings in combination with different structures serving as markers of method, purpose, or intention. Building on the original meaning of *đi* as indicating movement, the following section explores how this verb forms structures that convey the action of disappearing or moving away.

4.1. The VP- *đi* and VP-NP- *đi* Construction

In Vietnamese, the verb *đi* is often used in conjunction with another verb to form the VP-*đi* 'VP-go' construction. This construction is employed to convey an action that results in someone or something being taken away, pushed away, or leaving a certain place. The use of *đi* in this context helps to emphasize the aspect of movement associated with the primary action described by the verb.

(2) a. Chẳng những gia quyến của ta bị đuổi mà vợ con các ngươi cũng bị kẻ khác bắt đi. (HTS, 1284, p.2)
Not only were our relatives driven away, but your wives and children were also taken away by others'.

b. Cái lấy được không đủ bù cho cái mất, sự thu hoạch không bõ vào sự mất đi. (QTTMT, 1423, p.51)
'What is gained is not enough to compensate for what is lost, the harvest does not make up for what is lost'.

c. Oán hận chí định thét lên, đuổi cõi anh đi. (NBCT, 1990, p.57)
'Resentment, she wanted to scream at him, chase him away'

In sentence (2a), *đi* is used in conjunction with *bắt* 'taken away' to express

the action of someone being forcibly taken away. The addition of *đi* emphasizes the movement aspect of this action, suggesting that the individuals taken away have physically departed from their original location or that the entire family of the speaker will be forcibly removed. This meaning is further clarified in example (2b) when *đi* is used in conjunction with *mất* 'lost' to express the idea of something disappearing or being lost. The addition of *đi* suggests that whatever is lost has moved away or vanished rather than simply being absent.

The VP-NP-*đi* 'VP-NP-go' construction indicates removal from a position, as seen in (2c), where it suggests the object *anh* 'him' is being pushed away or removed. Unlike passive constructions, which affect the subject (2a), this example emphasizes the subject's active role.

This usage highlights the grammaticalization of *đi* to express not just physical movement but also changes in state or condition. On the other hand, *đi* also exemplifies a process of grammaticalization as it specifies different means or methods of accomplishing an action.

4.2. *Đi*-NP/VP as a Marker of Means

The verb *đi* can serve as a marker to denote means that refers to the mode of transportation or the method of doing something. In examples (3a-b), the construction *đi*-NP indicates the modes of transportation (*thủy* 'by water', *bô* 'by road'), which correspond to established classifications such as air, road, rail, and water (Chapman, 2007; Van Fan et al., 2018). This demonstrates a form of grammaticalization where *đi* becomes associated with different methods of travel which refers to the specific means of transportation used to move from one place to another.

(3) a. *Đi* thủy thì ta cho thuyền; *đi* bô thì ta cho ngựa.
 HTS, 1284, p.2)
 'Go by water' I provide a boat; go by road, I provide a horse.'

b. Bữa nọ tôi gửi thư đến, chưa được trả lời, sai thông sứ *đi* nói
mồm không có gì làm bằng'. (QTTMT, 1423, p.66)
 'The other day, I sent a letter but haven't received a response
 yet, asking the messenger to go talk without any evidence'

In example (3a), *thủy* 'water' is often used in older Vietnamese texts and is

a kind of Hán-Việt (Sino-Vietnamese) terms.³ Here, *thủy* 'water' means traveling by different modes of water transportation, while *bô* broadly refers to modes of 'road travel', in which *thủy* 'water' and *bô* 'road' specifies the method of travel associated with *đi*, suggesting a journey either by water or land.

In (3b), the construction *đi nói mồm* 'go talk' indicates that the messenger is tasked with communicating verbally, using only words, without any supporting evidence or proof. The use of *đi* emphasizes the verbal act, highlighting the unusual of the situation.

4.3. The *đi*-VP as a Marker of Purpose or Intention

We now turn to the role of *đi* as a marker of purpose or intention, where the construction of *đi* followed by a VP implies the intended action. In example (4), *đi* denotes the soldiers' intention to gather grass, highlighting the purpose that drives the soldiers' movement.

(4) Quân lính đi lấy cỏ cứ thấy bị giết. (QTTMT, 1423, p.13)

'The soldiers went to get grass and just saw being killed'.

However, when *đi* is combined with *lại* 'come' in *đi lại* 'go come' or repeated as in *đi* *đi* *lại* *lại* 'go go come come', it takes on a different significance, as illustrated in examples (5a-b). Originally denoting movement or action, the verb *đi* has developed its grammaticalization to extend beyond mere physical motion, conveying deeper meanings associated with engagement, interaction, and persistence.

In (5a), the VP *đi lại* signifies interaction or engagement between entities, specifically *tôi* 'I' (The speaker is Nguyễn Trãi) and *đại nhân* 'you' (the listeners are Vương Thông, Sơn Thọ & Mả Kỳ).⁴ The decision *không*

³ Upon analyzing the data, we see that these historical works use many Sino-Vietnamese terms. Borrowing from Mandarin was pervasive at that time.

⁴ Letter sent to General Vương Thông, eunuch Sơn Thọ, and Mả Kỳ in Đông Quan Citadel. Based on the decisive military victories that have been achieved, Nguyễn Trãi continues to analyze the pros and cons of various arguments, offering a way out for the Ming army to quickly end the war. The letter was sent around November in the year 1427.

cùng đi lại 'not to accompany anymore' suggests an ending of this interaction, possibly due to changing circumstances between the two countries. Thus, *đi lại* 'go come' conveys the idea of engagement or interaction between the speaker Nguyễn Trãi and the persons addressed. Nevertheless, in certain circumstances, *đi lại* 'go come' emphasizes its core lexical meanings. As demonstrated in example (5b), *đi lại* 'go come' refers to the concept of movement. In this case, *đi* primarily indicates the physical act of motion along the street, describing walking, typically with two feet. Unlike its use in example (5a), which illustrates relationships among parties, the term in (5b) retains its literal sense of physical motion.

Furthermore, (5c) employs the repetition of *đi* to intensify the notion of continuous movement. Initially, we would interpret the rapid movement of two legs. However, within the context of the two parties, it emphasizes the intended purpose of the action. The reduplication *đi* *đi* *lại* *lại* 'go go come come' conveys a sense of persistent action, emphasizing the ongoing effort of going back and forth endlessly to encourage the connection between the two countries. This repetition suggests that the speaker Nguyễn Trãi is continuously and actively engaged in the pursuit of his goal.

(5) a. Như thế thì tôi quyết ý không cùng đi lại với đại nhân nữa.
(QTTMT, 1423, p.68)
'In that case, I've decided not to accompany you anymore'.

b. Lén nhìn sứ ngụy đi lại nghênh ngang ngoài đường.
(HTS, 1284, p.1)
'Secretly watching the envoy of the usurpers strutting on the street'.

c. Tôi sở dĩ cần quyền gửi thư, đi đi lại lại không dứt, chính là ơn của đại nhân. (QTTMT, 1423, p.68)
'I, due to the need for the right to send letters, constantly go back and forth, solely because of your favor'.

4.4. The Expression of Future Modality in Vietnamese Verb *đi*

Let's now turn to *đi* when it expresses upcoming occurrences and purposes. According to Yi and Ogawa (2024, p.6), "The major change that takes place in the process of grammaticalization is the loss of the spatial meaning, and the function of expressing intention comes into play". Therefore, when using the English *be going to* construction to describe an action, speakers

typically convey intention or a future event. Furthermore, *be going to* often carries an epistemic modal meaning (Yi & Ogawa, 2024; Machová, 2015).

However, unlike English *be going to*-VP constructions, the *đi*-VP construction in Vietnamese is unable to convey either deontic or epistemic modal meanings. In other words, it lacks the ability to express necessity, obligation, permission, intentions or predictions about the future. This is exemplified through examples (6a-b). In example (6a), the presence of *sẽ* 'will' indicates the speaker's intention or commitment to accompany *anh*'you', reflecting deontic modality. If *đi* could convey the same deontic modality meaning as *sẽ*'will', then *sẽ* could be replaced by *đi*. However, this substitution is not possible, indicating that *đi* does not carry the same deontic modal connotations as *sẽ*.

Similarly, *sẽ*'will' can be used in conjunction with *không bao giờ* 'never' (6b), expresses an epistemic modal meaning. This combination suggests the speaker's prediction regarding the likelihood of the door reopening in the future. The addition of *không bao giờ* 'never' intensifies the sense of permanence locked of the door. However, *đi* cannot replace *sẽ* to form an epistemic modal meaning. This inability to substitute *đi* for *sẽ* in this context highlights that *đi* does not perform either deontic or epistemic modal functions in the *đi*-VP constructions.

- (6) a. Em *sẽ* đi cùng với anh. (NBCT, 1990, p.72)
'I will go with you'.
- b. Cửa giả bên buồng nàng im lìm khóa trái, có vẻ như sẽ không bao giờ còn mở ra nữa. (NBCT, 1990, p.34)
'The door in her chamber remained tightly locked, seeming as if it would never open again'.

In sum, the examination of future modality in the verb *đi* reveals that *đi* does not carry the deontic or epistemic modal meanings found in English *be going to*. This distinction is illustrated through examples where *sẽ* 'will' in Vietnamese serves to express intention or prediction, roles that *đi* cannot fulfill. Yet, the Vietnamese *đi* expresses future modality in its own way.

5. Discussion: The Unique Construction and Future Modality of *đi*

This section focuses on the unique grammatical construction of *đi* and how it differs from *be going to* in expressing future modality.

Upon analyzing its grammaticalization through historical stage and comparing it with the reviewed languages, we find that the development of *đi* into the fixed expression *đi lai* 'go come' is unique, as no equivalent structure has been identified in English, Chinese or Thai. As example (5a) shows, the fixed expression *đi lai* 'go come' conveys interaction, often used in situations involving two sides, and is primarily employed to indicate human relationships. In circumstances where no interaction is involved, *đi lai* 'go come' refers to physical movement rather than relationships, such as in (7).

(7) Truóc vì trại đóng hơi xa, thực khiến đi lai vất vả.

(QTMTMT, 1423, p.16)

'Previously, because the camp was located quite far away, it made traveling difficult'.

In example (7), the context describes the difficulty of travel due to the camp's distant location. The sentence focuses on movement between locations, emphasizing the physical effort required for going out and coming back to the camp, without implying any interaction between individuals or entities. Thus, the phrase *đi lai* 'go come' in this case refers to physical movement instead of relationships.

In Taiwanese, the combination of *go* and *come* is also found. According to Lin (1975, p.126), in Taiwanese dialects, the directional motion verb *khi* 'go' can appear after *lai* 'come' at the end of a sentence (8a) or at the start (8b, emphasis added), but it cannot be placed in the middle.

- (8) a. Sâm-à, lài₃ khì.
Sam come go.
Sam, let's go'.
- b. Sâm-à, lài₃ khì ciăq pñg.
Sam come go eat rice.
'Sam, let's go eat'

However, a fixed expression like the Vietnamese *đi lại'go come'* shows an undergoing of grammaticalization that Taiwanese combination of *lai* 'come' and *khi* 'go' does not communicating. While *lai* 'come', which suggests movement toward the speaker, has developed into a form that conveys the idea of starting or initiating action, similar to the English phrase *let's go*, Taiwanese *khi'go* indicates a transition to the next activity, unspecified (8a) or specified (eating) as in (8b). In other words, in Vietnamese, *đi lại'go come'* has shifted from a literal directional meaning to a fixed expression indicating relationships, whereas in Taiwanese, *lai khi* 'come go' is used to encourage movement or engagement in a new activity. The phrase *đi lại'go come'* refers more to a person's behavior, expressed in a delicate and indirect manner.

Furthermore, the English verb *go* has undergone a distinct grammaticalization process, transforming from the directional phrase *be going to* to a future marker. In this context, *be going to* functions as a single phrase indicating future intention or prediction. This contrasts with the Vietnamese verb *đi*, which, while used in various grammatical constructions to convey movement, purpose, or method, does not carry future meanings of intention or prediction.

One reason for this difference is that Vietnamese relies on different mechanisms to express modality. For example, future intentions or predictions are often conveyed using the verb *sẽ 'will'*. This separation of functions means that *đi* retains its core meaning related to physical movement or purpose rather than expressing future events. Thus, to indicate future intention, speakers use the structure *sẽ 'will' + VP*, as shown in (6a-b). On the other hand, Vietnamese lacks an equivalent to the English *be-V-ing* for continuous or future actions. Instead, it typically uses a future morpheme with the main verb or relies on contextual clues, to convey ongoing actions.

Nevertheless, we also see the structure *sẽ 'will' + đì + VP* in daily communication. In this case, *đì* does not denote future action but clarifies that the speaker will perform the action elsewhere, necessitating movement. See example (9):

(9) Tối nay em sẽ đi ăn ở nhà hàng
 'Tonight I will have dinner at the restaurant'

In (9), the speaker uses *sẽ* 'will' as an epistemic modal, indicating that the action will happen in the near future as planned. *Đi* is used to further clarify that the action will take place outside, requiring movement. Nonetheless, there are instances where *đi* cannot be used to express a similar requirement for moving actions as in (10).

(10) Tối nay em sẽ ăn ở nhà
 'Tonight I will have dinner at home'

In example (10), *sẽ* 'will' expresses the future meaning, but *đi* is not used to emphasize the action because the Vietnamese *đi* implies movement away from the origin. Since *nha* 'home' is considered the starting point or origin for a person in Vietnamese culture, instead of using *đi*, people use *về* 'come'. For example, in Cù Huy Cận's poem *Em về nhà* 'You come back home' (1940), the use of *về* 'come' illustrates this cultural perspective. This concept is also reflected in various songs, such as *Trở về mái nhà xưa* 'Come back to the old home' by Phạm Duy (1948) and *Về nhà* 'Come home' by Nguyễn Quang Dũng (2020). This separation of functions means that *đi* retains its core meaning related to physical movement or purpose rather than expressing the future events.

Note that this discussion is based on a limited data set of classical works given that a Vietnamese corpus is unavailable. Yet the existing dataset addresses this interesting linguistic fact that is worthy of presenting.

6. Conclusion

The grammatical evolution of *đi* reveals its adaptability and expanded functions in historical Vietnamese texts. The verb *đi*, initially defined by its core meaning of motion, has developed to serve multiple grammatical roles.

In conclusion, the Vietnamese verb *đi* illustrates the process of grammaticalization. In the VP-*đi* and VP-NP-*đi*, it denotes removal or disappearance, while the *đi*-VP demonstrates *đi* as a marker of purpose or intention, indicating the goal of actions. The use of *đi* with *lai* 'come' and its

reduplication also showcases its evolution to convey engagement, interaction, and persistent effort.

Moreover, the fixed expression *đi lại* 'go come' introduces a unique grammatical function in Vietnamese. The grammatical evolution of *đi* in the structure *đi* + VP/NP showcases its transition to a marker of method and purpose. Originally used to describe movement, *đi* has adapted to specify different methods of travel. The integration of *đi* into various contexts emphasizes its expanded function in marking both the method of movement and the strategic use of resources. Regarding future modality, while English integrates the progressive aspect and infinitive marker to form a future modal construction, Vietnamese employs separate modal verbs like *sẽ* 'will' to express similar meanings. The distinctive aspect of Vietnamese future construction lies in the fact that *đi* could not grammaticalize into a future marker, necessitating the use of *sẽ* 'will' + V, which contrasts with the English *go* that evolved primarily as a future marker in the phrase *be going to*.

Further research with a larger corpus could provide a deeper comprehension of the grammaticalization of *đi* and its interaction with modality in Vietnamese. Future studies could examine additional contexts and constructions to explore the roles of *đi* in expressing different grammatical functions.

This study adds to our comprehension of the early steps of grammaticalization of *đi*, an area with relatively limited exploration in Vietnamese linguistics. By examining historical texts, this study sheds light on the evolution of *đi* at the particular stage and may provide useful perspectives for exploring its grammaticalization in the modern period, post-20th century. Lastly, the study contributes to a broader understanding of the development of future modality in Vietnamese and offers data for comparisons with similar constructions in other languages.

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Address for Correspondence

Bui Thi Bich Ngan
Department of Foreign Languages and Literature
National Cheng Kung University
No. 1, University Rd.,
Tainan City 701, Taiwan (R.O.C)

k26117028@gs.ncku.edu.tw

Shelly Ching-Yu Depner
Department of Foreign Languages and Literature
National Cheng Kung University
No. 1, University Rd.,
Tainan City 701, Taiwan (R.O.C)

shelley@ncku.edu.tw

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「兩個世界交會在極點」：
瑪格麗特·柯芬蒂詩《炫麗異世界》和
約翰尼斯·克卜勒《夢》融合科學與
文學之敘事策略對比

蘇靖棻*

國立政治大學

摘要

本文旨在探討瑪格麗特·柯芬蒂詩《炫麗異世界》(1666)和約翰尼斯·克卜勒《夢》(1634)中的敘事策略對比，分析兩位作者如何將科學論述與文學元素融合在其作品中。筆者主張柯芬蒂詩利用虛構的角色和對話模式，將其自然哲學理念無縫整合到文學敘事中，創造多層次且動態的交流觀點。相較之下，克卜勒採用單一敘事模式和邊界明確的框架敘事，使其核心科學論述與框架性的虛構敘事相對分離且較為僵硬。本文透過比較柯芬蒂詩和克卜勒在融合科學與文學元素上的不同敘事策略，探究作者的專業背景、個人興趣以及作品的創作歷史如何影響其敘事策略選擇，並形塑讀者對作品的解讀與歸類。筆者利用文氏圖模型(a Venn diagram model)視覺化呈現兩部作品中科學與文學的交疊程度與類型，顯示柯芬蒂詩的《炫麗異世界》更側重文學面向，而克卜勒的《夢》則以科學論述為核心。藉由探討科學論述與文學想像的互動關係，本文企圖深化對早期現代科學與文學錯綜關係的理解。

關鍵詞：瑪格麗特·柯芬蒂詩、《炫麗異世界》、約翰尼斯·克卜勒、《夢》、科學與文學

* 國立政治大學外文中心專任助理教授

“Two Worlds Joined at Their Poles”:
Contrasting Narrative Strategies of
Conflating Science and Literature in
Margaret Cavendish's *The Blazing World*
and Johannes Kepler's *Somnium*

Jing-Fen Su*

National Chengchi University

Abstract**

This essay examines the contrasting narrative strategies in Margaret Cavendish's *The Blazing World* (1666) and Johannes Kepler's *Somnium* (1634), highlighting how both authors blend scientific discourse with literary elements. Cavendish employs fictional characters and dialogues to integrate scientific ideas into her literary narrative, creating a multifaceted and dynamic exchange of perspectives. In contrast, Kepler utilizes a monologic structure with clear-cut framed narratives, presenting his core scientific discourse in a more rigid and separate manner from the fictional framework. By analyzing Cavendish's use of fictional characters and dialogues to convey scientific ideas and contrasting it with Kepler's reliance on monologic discourse and framed narratives, the essay explores how the authors' professional backgrounds, personal interests, and the

* Currently Assistant Professor at Foreign Language Center, National Chengchi University.

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compositional history of the works influence their narrative choices and shape the readers' perceptions. The study employs a Venn diagram model to illustrate the varying degrees of overlap between science and literature in these texts, emphasizing Cavendish's predominantly literary approach and Kepler's primarily scientific focus. By exploring the interplay between scientific discourse and literary imagination, the essay aims to deepen our understanding of the intricate relationship between science and literature during the early modern period.

Keywords: Margaret Cavendish, *The Blazing World*, Johannes Kepler, *Somnium*, science and literature

"And this is the reason, why I added this piece of fancy [i.e. *The Blazing World*] to my philosophical observations [i.e. *Observations upon Experimental Philosophy*], and joined them as two worlds at the ends of their poles; both for my own sake, to divert my studious thoughts, which I employed in the contemplation thereof, and to delight the reader with variety, which is always pleasing."

—Margaret Cavendish, "To the Reader," *The Blazing World* (no pagination)

Introduction

As a prolific female natural philosopher in seventeenth-century England, Margaret Cavendish (1623-73) published many scientific treatises on natural philosophy, in addition to poetry, drama, letters, biography and prose fiction. She frequently infused her scientific concepts and deliberations into her literary oeuvre, demonstrating a distinctive ability to intertwine the disciplines of science and literature.

Cavendish's prose fiction *The Blazing World* was published in the same volume with her scientific treatise *Observations upon Experimental Philosophy* (1666).¹ The phrase "two worlds joined at their poles" in my title draws from a note in Susan James's edited book of Cavendish's political writings, which comments on Cavendish's preface to *The Blazing World* (*Political Writings* 5n2). In this preface, the "two worlds" refer to the realm of natural philosophy, grounded in "reason," and the realm of literary imagination, based on "fancy." James highlights Cavendish's focus on the "interconnections" between reason and fancy, encouraging readers to "move between philosophy and fiction" (*Political Writings* 5n2). Cavendish's decision to publish her prose fiction alongside her scientific treatise symbolizes the real-world convergence of these two fields, a convergence physically manifested in the book that unites the two distinct works in a single volume. This material union reflects deeper connections

¹ My quotations of this work come from Cavendish's 1666 edition accessed via EEBO, cited hereafter as *Observations*.

within Cavendish's textual universe, as evidenced by the integration of her scientific discussions into her literary work.²

When analyzing elements of (proto-)science fiction in Margaret Cavendish's *The Blazing World* in an earlier essay, I argue that Cavendish provides scientific and astronomical explanations to make her creation of the alternative Blazing World plausible. The scientific explanations, though presented as digressions, are "organically integrated" into the utopian narrative (Su 160). Whereas Johannes Kepler's *Somnium* (1634) features "clear-cut" layers of framed narratives, Cavendish's work intricately combines different genres, demonstrating the novel's potential to "cannibalize" and consume diverse literary modes (Su 161).

Using this argument as a starting point, this essay examines in greater details the narrative strategies of Cavendish's *The Blazing World* in contrast to Kepler's *Somnium*, to explore how both authors, writing during the Scientific Revolution, blend elements of science and literature in their science fictional works.³ By contrasting their approaches, the analysis highlights how Kepler's monologic discourse, conveyed through a single narrator, readily aligns with the author's perspective, whereas Cavendish's dialogic discourse, featuring multiple narrators, complicates the identification of the author's stance amid the interplay of varied voices. This investigation of the interplay between scientific discourse and literary forms in Cavendish's *The Blazing World* and Kepler's *Somnium* seeks to

² Cavendish's decision to publish *Observations* and *The Blazing World* in the same volume, just like "two worlds joined at the ends of their poles," entails her view of the close connection between these two works. Cavendish describes *The Blazing World* as a "Piece of Fancy" intended both to divert her from her intensive contemplations and to "delight the reader with variety, which is always pleasing" ("To the Reader," *Blazing World*, no pagination). As Hutton indicates, by asserting "a serious purpose of her book," Cavendish aligns with Francis Bacon's perspective on the utility of fiction in advancing new concepts ("Science and Satire" 167). Cavendish believes that reason sometimes benefits from the assistance of fancy "to recreate the Mind, and withdraw it from its more serious Contemplations" (*Blazing World*, no pagination).

³ I do not intend to claim that these two works by Kepler and Cavendish are "science fiction" in its narrow sense. Instead, my analysis in this essay focuses on the science fictional elements in the two works.

deepen our understanding of the intricate relationship between science and literature during the early modern period.

The Relationship between Science and Literature

The relationship between science and literature in the early modern period was far more intertwined than is commonly assumed. Stephen Jay Gould challenges the perceived dichotomy between the sciences and humanities, arguing that both fields adopted complementary approaches to knowledge during the seventeenth and eighteenth centuries (84-85). He highlights how many prominent naturalists and empiricists in the Scientific Revolution were well-versed in and revered the ancient works in Latin and Greek. Similarly, William Powell Jones and Thomas L. Hankins note that during this era, natural philosophy (the study of nature) was integrated with literature. Although Enlightenment scholars continued to hold literature in high regard, it was not until the nineteenth century that the separation between science and literature was done (Powell 8-9). In other words, the relationship between science and literature was much more closely connected than commonly assumed at least through the eras of the Scientific Revolution and the Enlightenment.

Tita Chico emphasizes that natural philosophy embedded literary qualities, allowing authors to explore new definitions of evidence and authority (134). She shows how works like Thomas Sprat's *The History of the Royal Society*, Margaret Cavendish's *The Blazing World* and Jonathan Swift's *Gulliver's Travels* used literary forms to express and critique scientific ideas, demonstrating the capacity of literariness to shape and express complex societal visions (14).

The close relationship between science and literature during the seventeenth century, particularly during the Scientific Revolution, reflects a time when natural philosophy was regarded as an integral part of the humanities. To illustrate various aspects of this relationship, I propose a Venn diagram model, as illustrated in Figure 1a, Figure 1b, and Figure 1c below.

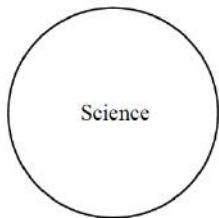


Figure 1a: No overlapping between science and literature

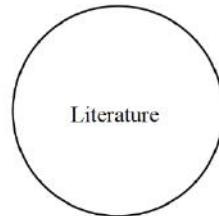


Figure 1b: Minimal connection between science and literature

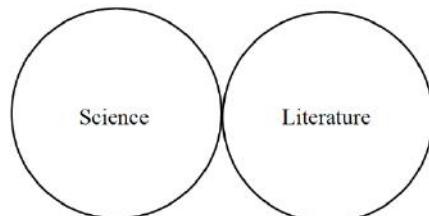


Figure 1c: Overlapping between science and literature

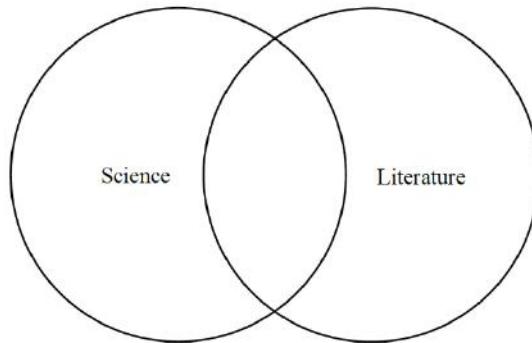


Figure 1c: Overlapping between science and literature

The Venn diagrams illustrate the varying degrees of connection between science and literature within a work. In Figure 1a, the circles representing science and literature do not overlap, indicating no connection between the two fields in the work. Figure 1b shows a minimal connection at a single point, suggesting that the work is predominantly literary or scientific and incorporates only a slight element of the other field. Figure 1c, with significant overlap, indicates a work where science and literature are deeply intertwined.

The extent of overlap between science and literature can vary, leading to larger or smaller areas of intersection. A literary work may incorporate scientific elements, and a scientific work may contain literary elements.

The genre classification of a work often depends on the proportions of these two fields. For instance, a predominantly literary work with minor scientific discussions is usually categorized as a literary work (fiction), whereas a work with a strong scientific approach is generally recognized as science (nonfiction). The greater the imbalance between the two fields, the more straightforward it is to classify the work; the closer the balance, the more challenging and potentially perplexing it becomes for the reader.

The integration of literary and scientific discourses within a work can be heavily influenced by the author's background, professional training, personal interests, and the compositional history of the work. A scientist with expertise in natural philosophy, mathematics, geometry, astronomy, anatomy, or medicine is more likely to infuse their works with scientific principles and scholarly discussions. This explains why numerous renowned natural philosophers and scientists, such as Johannes Kepler, Margaret Cavendish, H.G. Wells, Julian Huxley, and Naomi Mitchison and Arthur C. Clarke,⁴ have all contributed to the genre of science fiction that bridges science and literature, despite their varied motivations and strategies for melding scientific and literary components.

Science fiction typically represents a significant overlap between the fields of science and literature. M. H. Abrams notes that science fiction actively endeavors "to render plausible the fictional world by reference to known or imagined scientific principles, or to a projected advance in technology, or to a drastic change in the organization of society" (279). By definition, science fiction draws upon established or hypothetical scientific principles to construct and rationalize the narrative framework. However, literary works that explore scientific themes may also incorporate elements beyond science fiction, such as satire, utopia, travel narrative, allegory, poetry, and romance, depending on the author's creative choices and narrative objectives. To view this from the other side, scientists discussing their innovations and theories might resort to literary devices to articulate their findings, although these might be less perceptible to readers, if the bulk of the content is presented in the format of the scientific treatise.

⁴ The later four writers are suggested by Patrick Parrinder in his 1990 essay "Scientists in Science Fiction: Enlightenment and After" (60-72), to which I add Kepler and Cavendish.

This essay will explore the contrasting narrative strategies used by Cavendish and Kepler to navigate the intersection of science and literature in their works. As prominent scientists—natural philosopher and astronomer respectively, both Cavendish and Kepler produced scientific treatises and literary works during the seventeenth-century Scientific Revolution. Their works are exemplary in demonstrating the intricate connections between science and literature, making them ideal subjects for examining how science fiction can serve as a conduit for scientific and imaginative exploration and how the writers' professional backgrounds influence their narrative choices and themes.

Cavendish and Scientific Debates about the Plurality of Worlds

Margaret Cavendish's integration of scientific discourse into *The Blazing World* is deeply rooted in her engagement with the natural philosophical debates of her time. As a prominent natural philosopher, Cavendish actively participated in discussions surrounding topics such as atomism, vitalism, and the plurality of worlds, which served as a foundation for her imaginative exploration of alternative realms. Critics have widely acknowledged her contributions to seventeenth-century scientific discourse. Jay Stevenson and Judith Moore examine how Cavendish incorporates her natural philosophical ideas, such as atomism and vitalism, into her literary works.⁵ Frédérique Ait-Touati argues that her blending of fiction and scientific treatise represents a significant shift from Baconian "imitation" to an inventive, novelistic approach, challenging the boundaries between knowledge and fiction (490-91).

Cavendish's work exemplifies how her professional background shaped her ability to navigate and integrate scientific concepts within a literary framework. Unlike many of her contemporaries, Cavendish rejected rigid philosophical systems, critiquing them as artificial constructs. She regarded all theories as provisional and argued that philosophical systems often resembled fictional narratives more than empirical explanations (Ait-Touati 497). This perspective allowed her to explore scientific ideas with a creative fluidity that blurred the distinctions

⁵ In addition to her scientific treatises, Stevenson analyzes Cavendish's early literary works *Poems and Fancies* and *The World's Olio*. Moore focuses on her *Poems and Fancies* and *Philosophical Fancies*.

between fact and fiction, reflecting her broader materialist and vitalist worldview.

Research exploring the connections between *The Blazing World* and early modern science typically concentrates on Cavendish's parodic and satirical critique of the experimental philosophy practiced by members of the Royal Society (Chico 112-16; Mittag 135-36; Azcárate 110; Lascano 161). Feminist scholars like Eve Keller, Lisa T. Sarasohn, López-Varela Azcárate, and Martina Mittag view these critiques as part of her challenge to the gender biases prevalent in male-exclusive early modern scientific communities.⁶ In this section, I will investigate how Cavendish articulates and manifests her natural philosophical ideas through her literary writings. Rather than focusing solely on issues of gender, my analysis aims to transcend gender binarism and highlight Cavendish's innovative integration of scientific discourse within her literary creation.

During the Scientific Revolution, new technologies such as telescopes and microscopes were revolutionizing the study of nature and sparking debates about the innovative models of the universe,⁷ including the possibility of the "plurality of worlds" (Stevenson 1996; Moore 2002). To elucidate the potential scientific backdrop against which Cavendish conceptualizes the alternative worlds in *The Blazing World*, it is helpful to discuss two relevant models of the universe composed of infinite worlds, one proposed by Giordano Bruno (1548-1600), and the other by René Descartes (1596-1650).

Influenced by the Copernican heliocentric theory, the Italian scholar

⁶ Emma Wilkins contends that the male scientists in the Royal Society were more diverse than commonly perceived, and thus, Cavendish's criticism of these male scientists should not be oversimplified as solely based on gender ("Margaret Cavendish and the Royal Society" 245).

⁷ The most influential is Nicholas Copernicus's 1543 scientific treatise *De Revolutionibus Orbium Coelestium* (*On the Revolutions of the Heavenly Spheres*). Copernican heliocentrism influenced numerous later scholars, including Giordano Bruno (1548-1600), Galileo Galilei (1564-1642), Johannes Kepler (1571-1630), and René Descartes (1596-1650), among others. For more detailed analysis of the debates and controversies about astronomical models, see Robert S. Westman's *The Copernican Question* (2011).

Giordano Bruno believed in a boundless universe filled with innumerable celestial bodies like the earth, each representing a center of motion in its own world (Dick 65-69; Campbell 116-20; Connes 179-204). The following Figure 2 shows a diagram from Giordano Bruno's *De immense et innumerabilibus* (*On the Immense and Innumerable*) (1591) (Dick 68):⁸

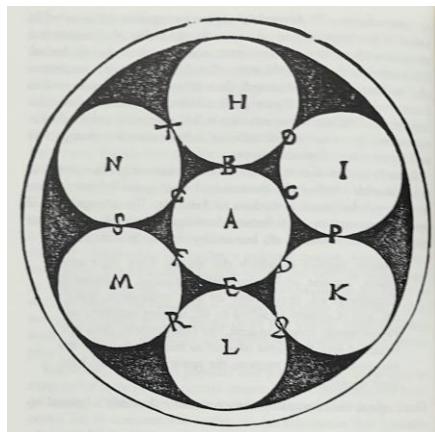


Figure 2: Giordano Bruno's diagram of the universe in *De immense et innumerabilibus* (1591) (Dick 68)

This diagram illustrates that "A part of world *H* placed at *B* cannot and ought not to drive toward the center *A* of another system, but toward the center of its own system" (Dick 68). Bruno's descriptions further elaborate, "There are then innumerable Suns, and an infinite number of Earths revolve around these Suns, just as the seven we can observe revolve around this Sun which is close to us ... around [the stars] revolve Earths both larger and smaller than our own" (*De l'Infinito* 304-6; qtd. in Connes 194).

⁸ A simplified version can be found in Bruno's earlier work *De l'Infinito universo e mondi* (*On the Infinite Universe and Worlds*), published in 1584 (Dick 68).

Although Bruno's model does not depict celestial bodies in contact with one another as shown in Figure 2, this radical cosmological concept of infinite worlds resonates within Cavendish's scientific treatises and forms the foundational worldview for *The Blazing World*.⁹

René Descartes also proposed a model of the universe incorporating the concept of a plurality of worlds. During Cavendish's exile in France (1646-48) with her husband, William Cavendish, Marquess of Newcastle, Descartes was among the leading intellectuals who frequented the Newcastles' residence (Whitaker 84-106). As the hostess of these gatherings, Cavendish likely became acquainted with the visitors' theories and research.¹⁰ Her perspective on the plurality of worlds could have been influenced by Descartes' model of the universe in *Principia philosophia (Principles of Philosophy)* (1644), as shown in Figure 3 below (from Dick 110):¹¹

⁹ In his book addressing the themes of the plurality of worlds and extraterrestrial life since the ancient time, Steven J. Dick only mentions Cavendish in a single note, stating that she adopts the "ancient atomist doctrine of the formation of infinite worlds through the random coalescence of atoms, and viewed the stars as suns with their own planets" (Dick 199n18).

¹⁰ Specifically, through conversations with Sir Charles, her husband's younger brother, Cavendish was introduced to the ideas of both ancient and contemporary philosophers, including Seneca, Lucretius, Descartes, Gassendi, and Hobbes (Whitaker 119).

¹¹ *Principia philosophia* was first published in Latin in 1644; a French version *Les Principes de la Philosophie* came out in 1647.

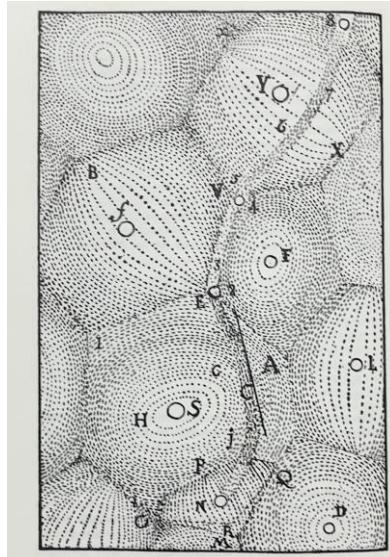


Figure 3: Descartes' vortex cosmology in *Principia philosophia* (1644) (Dick 110)

Descartes constructs a three-dimensional model to illustrate the distribution of stars across the universe. He envisions the space as partitioned into polyhedral cells centered on stars, just like "a conglomerate of soap bubbles"; the cells are of unequal sizes but of "comparable magnitudes" (Connes 296). Unlike stationary bubbles, each cell exhibits a dynamic whirling motion of "particles of subtle matter" resembling a vortex (represented as lines of cluttering dots in Descartes's diagram), with each star situated at the vortex's center (indicated by small circles) (Connes 296). Descartes further explains that the "poles of some of these vortices touch the parts farthest from the poles of some others," ensuring no two vortices share the same polarity, which prevents vortices with opposing poles from merging with each other (Connes 297).

As a devoted natural philosopher, Cavendish was interested in ancient

atomism and constructed her unique system of vitalistic materialism.¹² Her belief in the plurality of worlds articulated in *Philosophical and Physical Opinions* (1655) and other treatises, exemplifies her imaginative and scientific synthesis.¹³ She argues that Nature may repeatedly make the same creature by using the same matter with the same motions, but “motion delights in variety,” allowing for infinite particular worlds with infinite variety. She envisioned nature as capable of infinite variations, creating countless worlds filled with diverse creatures:

...motion may make *infinite particular worlds*, as infinite particular Animals, Vegetables, Minerals, and *those infinite worlds may differ*, as those kindes of Creatures; for worlds may differ from other worlds, not onely as man from man, but as man from beast, beasts from birds, birds from fish, . . . so there may be *infinite worlds*, and *infinite variety of worlds* . . . (*Philosophical and Physical Opinions* 38-39; italics added)

This belief aligns with her vitalistic materialistic view of Nature and is reflected in her conception of a multitude of distinct worlds populated with “infinite kinds of creatures” that surpass human imagination, akin to the extraordinary hybrid beings she creates in *The Blazing World*.

In *The Blazing World*, Cavendish depicts a human girl who accidentally intrudes into an alternative world connected to Earth at the North Pole. She provides scientific explanations for the existence of other worlds linked to ours, including the feasible means of entering this other realm (*Blazing World*, Part I, 3-4). Cavendish speculates that different worlds could be connected at their poles, with multiple suns visible near the poles, each illuminating its respective world. She envisions an underwater passage linking these worlds, challenging to traverse but not impossible, and makes efforts to explain the scientific principles that render such a journey credible.

¹² For relevant studies, see Sarah Hutton (1997, 2003), Susan James (1999), Lisa T. Sarasohn (2009, 2010), Lisa Walters (2014), Emma Wilkins (2014, 2016), Brandie and Sarasohn (2016), and Deborah A. Boyle (2018).

¹³ For example, Cavendish imagines other worlds smaller than a coin and endless worlds shone by their suns which we earth-dwellers see as stars (*Poems, and Fancies* 36 and 44).

López-Varela Azcárate associates Cavendish's descriptions of several suns with the belief in "Hollow Earth" and "inner suns in this subterranean world" in the mythologies of ancient civilizations (115). According to the astronomer Edmond Halley's theory, the earth could be "a hollow shell . . . with two concentric inner shells, each with their own atmospheres and magnetic poles, luminous inside" (Azcárate 115). However, if this were true, the suns would be blocked by the shells separating these "concentric" world, making it impossible for people in any of the worlds in Cavendish's story to see the suns of other alternative worlds.

The passage depicting the possible existence of multiple worlds quoted above is highly reminiscent of Bruno's visual representation of a vast universe filled with an infinite number of worlds, as shown in Figure 2. Cavendish's descriptions appear to diverge from the Cartesian model of vortices (Figure 3), where vortices cannot merge at their poles. Nevertheless, removing the aspect of the vortices' whirling motion from Descartes's theory, the depiction of tightly interconnected cells of small worlds provides a visual clue to how these worlds are joined in the cosmological perspective presented in *The Blazing World*.

Integration of Scientific Discourse within the Imaginative Narrative of *The Blazing World*

Delilah Bermudez Brataas argues that in *Sociable Letters* and *The Blazing World*, Cavendish skillfully combines science fiction, fantasy, and philosophy to create a unique utopian narrative. A central theme is the use of "hybridity," both in genre and content, as the work blends fantastical components with serious philosophical discussions (Brataas 37). Cavendish also explores the concept of multiple worlds, reflecting contemporary scientific debates about their potential existence. Brataas emphasizes that the fusion of the fantastical and the rational defines her innovative approach to genre and establishes her as a pioneer in early science fiction and utopian literature.

Brataas's analysis underscores the "fluidity" and interconnectedness of various forms of knowledge and existence in Cavendish's broader literary and scientific vision (41). I will delve deeper to investigate how Cavendish achieves such "fluidity" between scientific discourse and literary imagination in *The Blazing World* through two primary narrative strategies. First, she creates fictional characters, such as various animal-men and the "Immaterial Spirits," to experiment with her natural

philosophical theories. Second, she uses dialogues among characters to present different scientific viewpoints, enriching the narrative with dynamic exchanges of ideas.

In *The Blazing World*, Cavendish invents a diverse array of animal-men,¹⁴ reflecting her speculations on creatures in nature. This inventive taxonomy is not merely fantastical; it aligns with Cavendish's natural philosophical views in *Observations upon Experimental Philosophy*, where she suggests that quadrupeds could "easily and safely go upright like men," although they would be unable to "imitate the actions of man" fully (31-32). Cavendish brings her theoretical musings to life with remarkable consistency in *The Blazing World*. When the unnamed heroine first encounters the Bear-men and Fox-men in this alternative Blazing World, she describes them as "strange Creatures" "walking in an upright shape" like men (*Blazing World*, Part I, 4-5). In contrast to the limitations outlined in *Observations*, Cavendish's narrative in *The Blazing World* not only allows these four-legged animals to walk upright but also to engage in distinctly human behaviors. They communicate in languages, partake in eating, worshipping, and showing the heroine "all civility and kindness imaginable" (*Blazing World*, Part I, 5), thus blurring the lines between human and animal, scientific fact and imaginary fiction.

Cavendish extends this anthropomorphic transformation beyond quadrupeds to include avian, aquatic, and vermiform creatures in this fantastic blazing world. These beings, while engaging in human-like activities, also retain their species-specific abilities such as swimming or flying. For instance, the Bird-men are depicted with features reminiscent of wild geese, including "heads, beaks, and feathers," yet they adopt an upright posture (*Blazing World*, Part I, 5). This concept parallels her *Observations*, where she posits that "Flying is but swimming in the Air" (31) and theorizes that certain animals, if they possessed limbs with a similar form and function, might "perhaps fly as Birds do, nay, without the help of Feathers" (31). In *The Blazing World*, Bird-men embody Cavendish's speculative fusion of human and avian traits by transporting the Empress "upon their backs into the Air" (*Blazing World*, Part II, 21), illustrating Cavendish's innovative integration of scientific theories with imaginative

¹⁴ These include Bear-men, Fox-men, Bird-men, Fish-men, Worm-men, Ape-men, Spider-men, Lice-men, Magpie-men, Parrot-men, Jackdaw-men, among others.

narrative.

Cavendish also introduces “Immaterial Spirits” to further her scientific exploration. These spirits, described as “cloath’d in some sort or other of Material Garments . . . of Air” (*Blazing World*, Part I, 64), engage in dialogues with the Empress, revealing their nature and capabilities.¹⁵ This portrayal aligns with Cavendish’s unique version of vitalistic materialism, as outlined in her scientific treatise *Observations*. Susan James labels Cavendish “an extremely unusual vitalist” among seventeenth-century English thinkers, envisioning nature as composed of self-moving, thinking matter, and advocating for a material world endowed with life and knowledge (“The Philosophical Innovations of Margaret Cavendish” 219, 226). Emma Wilkins supports this view, highlighting Cavendish’s criticism of incorporeal substances and the deficiencies of both mechanical philosophy and traditional vitalism. By engaging closely with contemporaries like Thomas Hobbes, Johannes Baptista van Helmont, and Henry Power, Cavendish promotes a comprehensive materialistic explanation for all natural phenomena, including spirits (Wilkins “Exploding’ Immortal Substances” 861).

In *Philosophical Letters* (1664), her scientific discourse in the epistolary form, Cavendish discusses her views on “Immaterial Spirits” across various sections, asserting that immaterial entities like spirits, angels, devils, and the human soul are supernatural and not part of the natural, material world (227). She contends that everything in nature must be material. When discussing “the Immortality of the Divine Soul,” Cavendish muses that “if Nature had shewed [her] some of her secret and hidden effects, or if [she] had seen an Immortal Spirit,” it would be like a

¹⁵ Cavendish describes that these spirits inhabit “living bodies” which are the source of motion, countering the preconceived notion that the spirits animate their corporeal vehicles or give them motion (*Blazing World*, Part I, 71). These vehicles vary in composition, ranging from “gross and dense” to “more pure, rare, and subtil,” reflecting a spectrum of materiality (*Blazing World*, Part I, 71). These spirits are incapable of writing without utilizing human arms to transcribe their thoughts into words, underscoring their dependence on physical bodies for certain types of interaction within the natural world. Communication and sensory perception for these spirits are contingent upon having bodily organs, so without a physical body, they cannot “have bodily sense, but onely knowldg” (*Blazing World*, Part I, 70).

“Miracle” to her (*Philosophical Letters* 220). In the natural world, Cavendish may not meet with an immaterial spirit though she frequently discusses about them in her scientific treatises; nevertheless, by exercising her imagination, Cavendish can create those supernatural beings and conduct fictional conversations with them in her science fiction, making the “Miracle” happen. Her science fiction becomes a creative platform where she can conjure and interact with these supernatural beings. Exercising fancy or imagination is then indispensable to the “serious contemplations” of scientific studies and may even facilitate the rational mind to generate new ideas after the light-hearted diversion or distraction.

Besides the imaginary characters of the animal-men and the immaterial spirits, Cavendish also integrates scientific discourse into the imaginative narrative through dialogues between the Empress and the virtuosi of the societies. Sarah Hutton highlights the breadth and content of the Empress’s dialogues which reflect Cavendish’s engagement with “the intellectual revolution of the seventeenth century,” invoking contemporary scientific and philosophical discussions (“Science and Satire” 166). These conversations are interspersed with insights derived from Cavendish’s own natural philosophical work.

These conversations reflect Cavendish’s engagement with contemporary scientific debates. For instance, discussions on the movements of celestial bodies and the limitations of telescopic observations mirror Cavendish’s skepticism towards artificial instruments, as expressed in her scientific treatises. When the Empress instructs the Bear-men to observe the celestial bodies using their telescopes, their observations lead to a diversity of opinions. Some Bear-men deduce that the sun remains stationary while the earth orbits around it; others argue that both celestial bodies are in motion; while another group contends that the earth remains still and the sun revolves around it (*Blazing World*, part 1, 26).

Additionally, debates arise over the moon's physical features: some propose that the lunar world is like that on earth, with its spots representing "Hills and Vallies," whereas others argue that these spots are "the Terrestrial parts, and the smooth and gloosie parts, the Sea" (*Blazing World*, part 1, 26).¹⁶

In *Philosophical and Physical Opinions* (1655), Cavendish discusses the prevailing astronomical theories of her time, stating "I Will not dispute, according to *Copernicus*, that the earth goes about, & the Sun stands stil, upon which ground *Galileo* saith, the reason of the ebbing and flowing of the sea, is the jogging of the earth, the old opinion is, that the moon is the cause of it, which I can hardly beleeve" (86). In this scientific treatise, Cavendish specifically references the opinions of notable figures such as Copernicus and Galileo. In *Observations*, Cavendish further elaborates on her views of celestial observations:

For put the case, the Moon, or any other of the Planets, were inhabited by animal Creatures, which could see as much of this terrestrial Globe, as we see of the Moon, although they would perceive perhaps the progressive motion of the whole figure of this terrestrial Globe, in the same manner as we do perceive the motion of the Moon, yet they would never be able to discern the particular parts thereof, viz. Trees, Animals, Stones, Water, Earth, &c. much less their particular changes and alterations, generations and dissolutions. (147-48)¹⁷

Here Cavendish is using a premise of imagining how living creatures inhabiting the moon may perceive the situation on earth to illustrate her point that the celestial bodies of the universe including stars and planets, all undergo constant transformations similar to those on earth. However,

¹⁶ These descriptions/debates about the moon echo Kepler's interpretations of the spots on the Moon. It would be interesting to explore whether Cavendish obtains such ideas from reading Kepler's or other astronomers' works on this issue.

¹⁷ Cavendish's observations align closely with Kepler's fundamental argument in his seminal work on lunar astronomy, *Somnium*. Kepler posits that "Levania [the Moon] seems to its inhabitants to remain just as motionless among the moving stars as does our earth to us humans" (*Somnium* 17). Through adopting a perspective based on the moon, Kepler aims to support the Copernican heliocentrism.

these changes remain imperceptible to human eyes because of the immense distance separating the earth from these celestial bodies.

In *The Blazing World*, the Empress engages the Bear-men in a discussion to uncover the “truth of the Phaenomena’s of Celestial bodies” (*Blazing World*, Part I, 27). The Bear-men’s disagreements over their telescopic observations lead to the Empress expressing her “displeasure concerning their Telescopes,” stressing that the natural eye is superior for observing the movements of celestial bodies than through “Artificial Glasses” and consequently commands them to break their telescopes (*Blazing World*, Part I, 28). Through the interactions between the Empress and the Bear-men, Cavendish presents various perspectives on the motion of the sun, moon and earth, many of which are in conflict with one another as shown in the dispute among the Bear-men.

In *Observations*, Cavendish questions the practical value and accuracy of the telescope, pondering, “if it be true, that Telescopes make appear the spots in the Sun and Moon, or discover some new Stars, what benefit is that to us?” (no pagination). Within *The Blazing World*, the Empress serves as Cavendish’s mouthpiece, voicing her skepticism towards telescopic observations and the discord they generate among observers. Through this narrative strategy, adopting dialogues among different fictional characters, Cavendish not only critiques the reliance on telescopes by experimental philosophers, but also advocates for the primacy of human reason and direct observation over artificial means of exploration.

In *The Blazing World*, Cavendish creates imaginative characters to explore her natural philosophical theories in scientific writings. Through dialogues and character portrayals, she intertwines a diverse array of scientific ideas with her narrative, effectively merging scientific discourse with literary imagination.

The Compositional History and Clear-Cut Framed Narratives of Kepler's *Somnium*

The creation and publication of Kepler's *Somnium* were marked by a complex and lengthy process that spanned more than four decades throughout his turbulent career (1571-1630).¹⁸ Initially drafted as a lunar astronomy thesis by Kepler as a student at the University of Tübingen in 1593, the work was shelved after it was denied to be heard by the faculty of the institution.¹⁹ Sixteen years later in 1609, he took it out again and added a dream framework surrounding the core lunar astronomy. The circulation of the manuscript at this stage sparked controversy, leading to the unfortunate legal prosecution of Kepler's mother for witchcraft (initiated in 1615, acquitted in 1621). This incident prompted Kepler to further expand the manuscript with extensive notes between 1621 and 1630;²⁰ the work was eventually published posthumously in 1634.

Kepler's *Somnium* is structured in layered frame narratives like nested Chinese boxes. At the outermost layer, the narrator "I" recounts falling asleep and dreaming about reading a book acquired at a fair, and then starts to depict the content of the book, which forms the second narrative layer. This layer is an autobiographical account from Duracotus, detailing his early life, his mother Fiolxhilde, his journey to Denmark and back, and his mother's secret arts of acquiring knowledge from the "Daemon from Levania [i.e. the Moon]" (15). The invocation of a daemon by Duracotus's mother unfolds the third narrative layer, with the daemon's speech based on Kepler's student dissertation on lunar astronomy, now mixed with science fiction elements such as lunar voyages and extraterrestrial life on the moon. In the middle of the daemon's speech, the first narrative "I"

¹⁸ My quotations of Kepler's *Somnium* come from Edward Rosen's translated volume, *Kepler's Somnium: The Dream or Posthumous Work on Lunar Astronomy of Johannes Kepler, Late Imperial Mathematician* (University of Wisconsin Press, 1967), hereafter referred to as *Somnium*.

¹⁹ Professor Veit Müller, who took charge of students' disputations, strongly opposed the Copernican astronomy Kepler's dissertation entails, and therefore refused to allow Kepler to defend it (Rosen, "Appendix C" 207-8; Dick 70 and 203n27).

²⁰ In the midst of this period, in 1623, Kepler added the "Geographical, or If You Prefer, Selenographical Appendix" to *Somnium*, with notes for this appendix completed in 1628.

suddenly wakes up from his dream, abruptly ending the entire narrative. Appended to the main text of the story are 223 explanatory notes, where Kepler elucidates certain ludic points of his work and delves into extensive astronomical discussions. These notes amount to almost six times the length of the main narrative (18 pages of main text versus 118 pages of appended notes).

In his “Notes” appended to *Somnium*, Kepler presents a series of counterarguments and clarifications, employing a scholarly style reminiscent of scientific treatises, characterized by the use of technical language and structures typical of scientific discourse. For example, in the lengthy Note 154, Kepler addresses the issues of interpreting the dark spots on the moon based on optical theories concerning colors (*Somnium* 108-13). The language of this note is distinctly academic, aligning with that of a scientific treatise rather than a literary narrative. It meticulously cites sources, providing specific references to books and page numbers where the arguments are discussed.

In Kepler’s *Somnium*, clear-cut boundaries exist between the scientific discourse and the science fiction narrative. First, the core lunar astronomy, presented as the speech by the “Daemon from Levania,” can be taken out of the work to stand alone as an independent scientific treatise. Second, discussions of astronomical debates are placed in the extensive notes appended to the work, external to the science fictional narrative. When Kepler decided to frame his lunar astronomy within a dream vision in 1609, he did not choose to incorporate serious astronomical debates into the fictional narrative. While composing the notes between 1621 and 1630, Kepler chose not to incorporate the scientific discussions *within* the lunar astronomical dissertation or the overarching dream framework, instead presenting them separately *outside* the whole work in the form of appended endnotes. These narrative choices form a sharp contrast with Cavendish’s method of blending scientific discourse into her imaginative narrative through creating fantastical characters and dialogues.

Monologic Discourse in Kepler’s *Somnium* Versus Dialogic Discourse in Cavendish’s *The Blazing World*

In this section, I will contrast the monologic discourse in Kepler’s *Somnium* and the dialogic discourse in Cavendish’s *The Blazing World* to illustrate their different effects in conflating scientific discussions and literary imagination. Elizabeth A. Spiller’s analysis of Kepler’s *Somnium* and

Cavendish's *The Blazing World* highlights both authors' exploration of the limitations inherent in scientific observation and reading. She argues that Kepler, through his imaginary lunar world, and Cavendish, in her critique of experimental philosophy, challenge the barriers to understanding scientific truths. Spiller also notes their use of frame narratives to create a distance between the reader and the utopian visions presented, serving "both a means of access to an imagined ideal and a barrier to ever realizing it" ("Sighing Utopia" 150).²¹ However, structurally the two works are still written in very disparate forms: Kepler's *Somnium* presents disconnected, multi-layered narratives, whereas Cavendish's *The Blazing World* incorporates closely intertwined generic forms of romance, utopia, satire, allegory, science fiction, and scientific treatise, which moves closer to the form of the novel to be fully developed in the eighteenth century and beyond.

The daemon's speech, which contains Kepler's core lunar astronomy, is overwhelmingly monologic.²² The reader hears only the daemon's observations and perspectives. The listeners in the narrative, Duracotus and his mother, become silent and virtually vanish from the story once the daemon begins to speak. This narrative choice emphasizes the daemon's speech as a focal point for conveying Kepler's astronomical insights, leaving no room for interaction or response within the fictional context.

Unlike Kepler's *Somnium* with clear-cut boundaries between the monologic lunar astronomy and the layered fictional narratives, in *The Blazing World* Cavendish intertwines diverse perspectives on natural philosophy *within* her fictional narrative through character portrayals and dialogues among characters. Scientific discussions are presented through the Empress's dialogues with the virtuosi of her founded societies that comprise inquiries and elaborate responses. Cavendish embeds her

²¹ Spiller revisits her argument in a later article (2000), examining how Cavendish, alongside Galileo, critiques the experimental philosophy reliant on visually distorting artificial technologies, thus hindering readers' engagement in the creation of new scientific knowledge ("Reading through Galileo's Telescope" 216, 211).

²² When the daemon begins her speech, she immediately goes into the main topic without even addressing the human listeners: "Fifty thousand German miles up in the ether lies the island of Levania. The road to it from here or form it to the earth is seldom open..." (*Somnium* 15).

natural philosophical viewpoints primarily through the Empress and, to a lesser extent, through certain animal-men like Bird-men, Worm-men, and Fish-men. Conversely, viewpoints or methodologies that Cavendish critiques are often portrayed satirically in order to expose their absurdity and ineffectiveness, as seen with characters like Bear-men, Parrot-men, and Jackdaw-men.

A notable distinction between Cavendish's *The Blazing World* and Kepler's *Somnium* lies in their approach to incorporating different views within their works. Cavendish employs dialogues and conversations *within* her narrative, presenting the various opinions as anonymous, sometimes distorting them beyond recognition as typical of satire (Hutton "Science and Satire," 168). In contrast, Kepler presents different opinions in the authorial notes *outside* the fictional narrative of *Somnium*, which would demand scientific accuracy and evidence, including precise citations of authors, books, and page numbers.²³ Unlike Cavendish's approach of anonymous or casually cited opinions, Kepler indisputably attributed these differing opinions to identifiable scholars, including himself, indicated as "I" in the notes. Cavendish's method of anonymizing and distorting debates highlights the key features of the dialogic discourse, where different perspectives are voiced by various fictional characters, rather than direct references to real-world individuals.

Both Kepler and Cavendish draw inspiration from Lucian's work—probably Lucian's *A True Story*, known for its satirical narratives of voyages to alternative worlds. In the prefatory letter preceding *Observations upon Experimental Philosophy*, Cavendish alludes to "Lucian's, or the Frenchmans Art, with Bottles, Bladders, &c. or like the mans that would scru

²³ For example, in Note 154 Kepler indicates that "In favor of the correct opinion, which holds that the spotted parts are like seas and lakes, whereas the bright parts are like a dry continent or islands, you have completely convincing arguments in Galileo's *Sidereal Messenger*, in my *Conversation* with him, page 16, in my *Copernican Astronomy*, Book VI, page 81, and in Note 147, above" (*Somnium* 112-13). Another notable example is Note 223, in which Kepler presents lengthy discussions of "a disputation presided over by Mästlin and published in the year 1600 under the title *The Phenomena of the Planets*" (*Somnium* 135-47).

himself up into the Moon,”²⁴ though she emphasizes that her work is “a World of [her] own Creating” (no pagination). Hutton notes the appeal of Lucian and Cyrano, emphasizing their role in satirizing “contemporary philosophical and scientific ideas” (“Science and Satire” 171), highlighting the capacity of “Lucianic dialogues” to convey “novel, heterodox, and even dangerous ideas” through entertaining narratives (“Science and Satire” 171).

While Kepler adopts the concept of a Lucianic moon voyage, he diverges from the use of Lucianic dialogues, opting instead for a dream vision framework, possibly as a precaution against hostile attack at his Copernican stance. In contrast, Cavendish embraces both the Lucianic voyage to an alternative world by boat and the use of Lucianic dialogues when presenting different views on scientific debates.

In particular, Hutton points out “a Lucianic feature” called “the elusiveness of the authorial voice,” whereby Lucian “constructs one or more persona for the author that makes it difficult to attribute to him the views expressed in the narrative” (“Science and Satire” 173). Cavendish disperses her personal perspectives not only through the Empress and the Duchess, but also among some of the virtuosi in *The Blazing World* (“Science and Satire” 173). Consequently, readers may find it challenging to discern which opinions within the fictional narrative accurately reflect Cavendish’s own beliefs. In a different way, in Kepler’s notes appended to *Somnium*, the delineation of views, particularly on lunar astronomy, is clear and straightforward, allowing readers to easily distinguish between Kepler’s insights and those of other cited scholars. Despite Kepler’s employment of a dream narrative, the monologic delivery of the daemon’s speech further makes it easier to identify the author’s viewpoint as clearly represented by the daemon. This contrast underscores a fundamental distinction between the monologic and dialogic discourses: monologic discourse, often through a single narrator, more readily lends itself to being

²⁴ For these allusions Eileen O’Neill identify Savinien de Cyrano de Bergerac’s *Histoire comique contenant les etats et empires de la lune* [Comic Story Containing the States and Empires of the Moon] (Paris, 1657) and John Wilkins’s *The Discovery of a New World; or, A Discourse Tending to Prove, That (It Is Probable) There May Be Another Habitable World in the Moon...* (London, 1638). See also Sarah Hutton (2003), p. 171.

associated with the author's perspective, whereas dialogic discourse, with its multiple narrators, creates a complex interplay of voices that obscures the author's stance.

The dialogic structure in a narrative discussing scientific ideas enhances the integration of scientific discourse into imaginative literary work by creating a dynamic interplay between characters and ideas. This approach allows for multiple perspectives and voices to engage in conversation, mirroring the natural process of scientific inquiry and debate within a fictional context. Through dialogue, Cavendish interweaves factual scientific information with imaginative scenarios, blending reality and fiction in a cohesive manner. Dialogues can also propel the narrative forward by creating tension, conflict, and resolution around scientific ideas. This narrative momentum ensures that scientific discourse is not an isolated element but integrated into the story's progression. By employing a dialogic structure, Cavendish creates a vibrant, interactive narrative environment where scientific and imaginative elements are intricately connected.

Kepler's *Somnium* notably lacks such an element of dynamic interplay in its main fictional narrative. The scientific discussions pertaining to lunar astronomy are encapsulated within the predominantly monologic speech delivered by the daemon from the moon, which Fernand Hallyn characterizes as a "didactic speech" (262). In this speech, dialogue between characters is absent; Duracotus and his mother are merely silent listeners, offering no interjections or responses. Instead, Kepler opts to add a semblance of "dialogue" through the appended notes, modeled on those found in the scientific treatises to present different perspectives on the issue at hand. In such a monologic structure, different perspectives on certain scientific issues in scientific discourse are presented in separate, listed notes, appearing disjointed and isolated from the overall narrative progression.

In monologic discourse, the narrative primarily conveys the narrator's perspective, relegating alternative viewpoints to being indirectly voiced through the narrator, sometimes even incorporating direct quotations from the opponents. However, this format does not facilitate the opponents' direct rebuttals or spontaneous exchanges within the same textual space, often resulting in a one-sided conversation, as illustrated in Kepler's *Somnium*. In contrast, dialogic discourse presents a diversity of

perspectives, allowing characters to express different views through direct interactions, as seen in Cavendish's *The Blazing World*. This setup enables readers to witness the characters' immediate reactions to each other's statements within the same dialogue, leaving them to judge or evaluate the validity of the competing arguments. In such dialogic narratives, authors may employ various literary modes, including satire, irony, lampoon, and rhetoric, to influence readers' evaluation of these varied perspectives. This engagement with dialogism renders the narrative more dynamic and effective in presenting competing viewpoints.

Conclusion

Margareth Hagen, Randi Koppen, and Margery Vibe Skagen observe that classic dichotomies—such as “subjective versus objective,” or values versus facts—no longer suffice to delineate science from literature. They note “Intuition and imagination, the use of metaphors and rhetoric, are the prerogative of the creative scientist as much as the poet” (12). They further argue that as reason is segmented into different disciplines, and specialization intensifies across all areas of knowledge, any interaction between literature and science beyond “separation” often involves “popularisation” (24).²⁵ Scientists might therefore opt to adopt literary forms such as science fiction and utopia to popularize their scientific discoveries. For instance, in her preface to the 1668 edition of *The Blazing World*, Cavendish targets “all Noble and Worthy Ladies” who “take no delight in Philosophical Arguments” and typically eschew the hard, serious works on natural philosophical debates. This suggests her intent to popularize scientific concepts among female readers outside the scientific community. Cavendish's approach exemplifies how literature can be at the service of science, facilitating the dissemination of new scientific discoveries through literary forms such as science fiction, utopia, allegory, metaphor, and romance.

By applying my Venn diagram model to illustrate the overlap between science and literature in Kepler's *Somnium* and Cavendish's *The Blazing World*, we obtain Figure 1d and Figure 1e. In these figures, the gray area represents each of the works:

²⁵ The literary historian Erica Harth similarly describes Cyrano de Bergerac's *Autre Monde* as a work of “scientific popularization” (Campbell 12, n21).

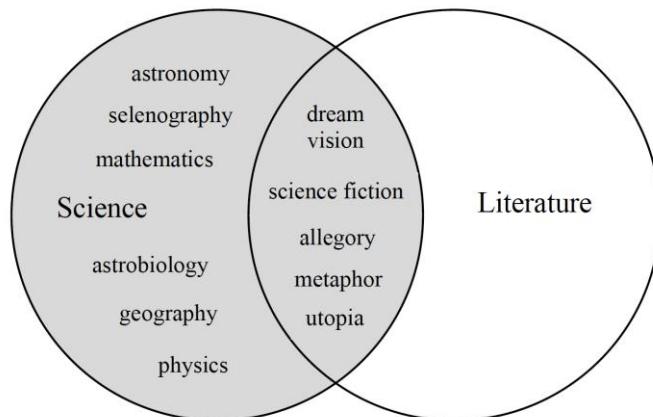


Figure 1d: *Somnium*'s overlapping between science and literature

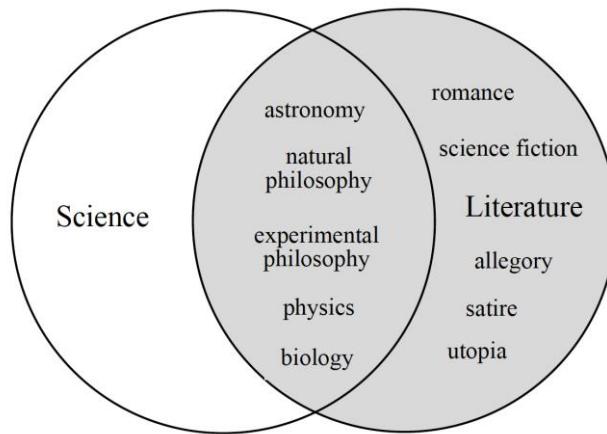


Figure 1e: *The Blazing World*'s overlapping between science and literature

The two Venn diagrams provide a visual representation of the integration of scientific and literary elements in Kepler's *Somnium* and Cavendish's

The Blazing World, emphasizing the predominant focus of each work. While both texts blend scientific and literary elements, *Somnium* is primarily scientific, whereas *The Blazing World* is predominantly literary.

In my analysis, Kepler, as an astronomer, predominantly positions *Somnium* as a scientific endeavor rather than a literary one. In the diagram for *Somnium* (Figure 1d), the left circle lists scientific disciplines such as astronomy, selenography (the study of the moon), mathematics, astrobiology, geography, and physics. These fields reflect the scientific foundation of Kepler's work, emphasizing its basis in empirical and observational sciences. The smaller, overlapping area includes dream vision, science fiction, allegory, metaphor, and utopia. This overlap demonstrates how Kepler combines his scientific knowledge with literary techniques to create a work that serves as a scientific hypothesis. The use of dream vision, for instance, allows Kepler to explore complex scientific ideas within a narrative framework, making them more accessible and engaging. By integrating these literary elements, Kepler contextualizes his scientific hypotheses, but the core of the work remains deeply rooted in scientific exploration and empirical inquiry.

In contrast, Cavendish, with her background in natural philosophy, composes *The Blazing World* primarily as a literary work, embedded with various generic forms including science fiction, utopia, allegory, satire, and romance. The diagram for *The Blazing World* (Figure 1e) shows a different balance, emphasizing its literary elements. The right circle encompasses a rich array of literary genres such as romance, science fiction, allegory, satire, and utopia. The smaller, overlapping area lists astronomy, natural philosophy, and experimental philosophy, reflecting Cavendish's engagement with contemporary scientific debates and her interest in the natural world. Despite its fantastical, science fiction façade rooted in imagination, Cavendish intricately incorporates her natural philosophical theories, including critiques of experimental philosophy, into her literary narrative. These two cases demonstrate how a writer's professional background and personal inclinations influence their approach to blending literature and science, shaping the balance between the two in their works.

This model of Venn diagram serves as a flexible tool for evaluating and visualizing the proportions of scientific and literary elements within a work. It is particularly helpful for analyzing science fictional works like *Somnium* and *The Blazing World*, illustrating how the authors bring the

two worlds of science and literature together in their works in unique ways. The overlap in Kepler's work focuses on how he uses literary techniques to present scientific ideas, reflecting his background as an astronomer engaged with empirical observations of the heavenly bodies. On the other hand, *The Blazing World* shows how Cavendish employs a broader range of literary genres to explore and communicate scientific ideas, which allows her to explore scientific ideas in a more multifaceted and critical manner.

This comparative analysis underscores the complexity and richness of early modern (proto-)science fiction. Using this Venn diagram model to analyze these works provides a clear and concise way to visualize the interdisciplinary nature of these texts, revealing the intricate ways in which early modern writers blended these elements to navigate and contribute to the intellectual currents of their time. This approach not only enhances our understanding of individual texts but also provides a richer perspective on the dynamic interplay between science and literature in early modern cultural and intellectual history.

Traditionally, science is seen as a domain of facts, while literature is viewed as a realm of values (Hagen et. al., "Introduction" 12). However, this dualistic, dichotomous perspective becomes untenable in the case of Kepler's *Somnium* and Cavendish's *The Blazing World*. Kepler wraps his lunar astronomical disputation with a dream vision of interplanetary voyage and extraterrestrial inhabitants, turning it into a science fictional work. Cavendish presents scientific facts with literary devices, notably through adopting the dialogic discourse to integrate scientific discussions into her science fiction narrative. These two cases confirm the views by Gould, Jones, and Hankins on the relationship between science and literature, illustrating how early modern works obscure the distinction between science and literature.

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Address for Correspondence

Jing-Fen Su
Foreign Language Center,
National Chengchi University.
No. 64, Section 2, Zhinan Rd,
Taipei City 116, Taiwan (R.O.C)

jfsu@nccu.edu.tw

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The “Taiwan in the Anthropocene Network III” Research Group: Multidisciplinary Discussions on the Impacts of Human Activity on the Climate and Environment

高珮文 Pei-Wen Clio Kao (國立宜蘭大學 National Ilan University)

“Taiwan in the Anthropocene Network III” (TAN III) is an NSTC-funded research group. We are a relatively new cross-disciplinary community, including scholars from various fields such as Literature, Sociology, Philosophy and Anthropology. Our research focuses on the multifaceted aspects of the Anthropocene, the geological period during which human activity has impacted the climate and environment. We aim to shed new light on the pressing issues of this impact on every aspect of human life. So far, we have gathered monthly this year, with two presenters leading a session. So far, we have held six sessions on particular themes: I. The Positionality of Taiwan in the Anthropocene; II. The Multispecies Connection and Interspecies Intimacy; III. The Indigeneity and the Alternative Modernities; IV. Resource Extraction; V. Apocalyptic imagination; VI. Trans-species Imagination in Asia.

Session One, “The Positionality of Taiwan in the Anthropocene,” was led by Dr. Courtney Work and Dr. Jean-Yves Heurtebise. Work’s presentation explored the origin of the “Royal We,” a position taken by some political-economic blocs in the Anthropocene. In this perspective, the “Royal We”—i.e. the whole of humanity—is regarded as responsible for the environmental degradation of the planet as a way to impose culpability on a universal scale. Work argues such statements and their proposed environmental solutions only serve and protect the interests of the particular groups who are in control of socioeconomic power. Heurtebise

explored the sophisticated concept of "Symphorophilia," the phenomenon of people aroused by the spectacle of catastrophes and accidents in his presentation. He started with the social collective (un)conscious desire for mass catastrophe, such as plane crashes, oil spill and wars. Next, he discussed how during the Misanthropocene era, the leftists believe in the indigenous way of life to save us, while the rightists believe in the power of technology. Heurtebise ends his presentation with a Taiwanese twist, discussing how Taiwan survives mass catastrophes in the context of Sino-globalization.

Session Two, "The Multispecies Connection and Interspecies Intimacy," was led by Dr. Hannes Bergthaller and Dr. Ya-Feng Wu. Bergthaller introduced Ray Nayler's 2022 novel, *The Mountain in the Sea*, which is a sci-fi thriller that carries the theoretical agenda of communicating with other-than-human species through semiotic processes. Bergthaller also compared this novel with other posthuman semiosis, attempting to consider humans' place in this Anthropocene era. In contrast, Wu introduced us to Kuei-Hsing Chang's *Monkey Cup*, which investigates the risk as well as redemption entailed for inter-species intimacy. The title of the novel refers to Nepenthes, a carnivorous plant. Wu interpreted the novel from the new lens of interspecies intimacies in contrast to the earlier critical attention on the struggle between different colonial powers.

Session Three, "The Indigeneity and the Alternative Modernity" was led by Dr. Li-Hsin Hsu and Dr. Chun-Mei Chuang. Hsu focused on the decolonial potentiality by Syaman Rapongan's littoral writings. Syaman Rapongan is a Tao writer living on Orchid Island and engaging in fighting against the colonial mentality of the Taiwanese government. As an indigenous activist writer, Rapongan employs the metaphor of the littoral zone, which is a queerized borderland filled with the potential of human-aquatic intimacy, to convey a sense of resistance and ambiguity that defeats the colonialist discourse of the mainstream culture. Chuang utilizes the line "We are all endemic species" from the documentary *Good Morning MIT* (《山椒魚來了》) to assert her agenda to speak for, of, and as the indigeneity. The purpose of rethinking and embracing indigeneity is all the more pressing for Anthropocene scholars. By linking the endemic species with Taiwanese nationalism, Chuang experiments with the possibilities of rhizomatic becomings of the Taiwan Island.

Session Four, "The Multispecies Connection and Interspecies Intimacy,"

was led by Dr. Rose Hsiu-Li Juan and Dr. I-Ping Liang. Juan's presentation was an exploration of the dream collectivity in the face of crisis such as the outbreak of COVID-19. Juan focused on the Native American dream tradition, which confronts the anthropocentric dream practice of the "Whiteman." In the former tradition, the indigenous people dream about others and about otherness, which can serve as a kind of dream agency in the Anthropocene era. Liang takes the production of Oolong tea as a prime example of transsspecies becomings that incorporates humans, plants and insects. Liang adopts the theories of Donna Haraway, Bruto Latour, and Scott Gilbert to map the complex and intertwined nurturing and cultivating process that form the poesis of Oolong tea.

Section Five, "Resource Extraction," was led by Dr. Paul Jobin. Jobin started from the concept of "petrochemical planet" to trace the production and pollution process of Formosa Plastics, which is key to Studies of Taiwan in the Anthropocene. Jobin investigated the Taiwanese government's discourse on the development of the high-value-added petrochemical industry as a way to place Taiwan at the center of global economics and at the margins of the (dis)United Nations.

Session Six, "Trans-species Imagination in Asia," was led by Dr. Catherine Ju-Yu Cheng and Dr. Shu-Ching Chen. Cheng focused on Shinkai Makoto's animated film, *Your Name*, to explore how the catastrophic meteorite disaster is unrepresentable and how it serves as a creative and destabilizing force. Cheng elaborates on the concept of "musubi" (non-linear time) to explicate the convergence of different durations that could break up the limitations of chronological time. Drawing on the theoretical perspectives of Deleuze, Malabou, and Blanchot, Cheng poses several questions on the possibility that ecological disasters could be reversed, though only if human beings are endowed with the ability to reverse time and change the course of history. Chen's presentation is based on a reading of an Asian immigrant's narrative in the Anthropocene era. The literary text she focused on to demonstrate the stigmatized Asian body is Larissa Lai's *Salt Fish Girl*. Chen explicates how Lai's novel mobilizes smell as a medium between humans and the environment in a posthuman context, which becomes an imagination of trans-species entanglements.

The events of TAN III have displayed the vibrancy and energy of our research group. The talks and discussions in each session have stimulated inter-disciplinary dialogues and cross-boundary thinking. The

Anthropocene is a difficult and challenging field that invites ongoing discussions and debates. Our Taiwan-based research network has and will continue to contribute to global scholarship of environmental humanities to address the various issues of the Anthropocene.

政治大學《外國語文研究》期刊書評 / Editor's Note

兩篇精彩的評論如同兩面透鏡，引領我們穿越時空深度審視文學在時代洪流中的關鍵作用。首篇〈從韓江的《少年之殤》與《素食者》思考跨界的抵抗〉將目光投向當代，聚焦於韓江榮獲諾貝爾文學獎這項韓國文壇盛事。此成就象徵韓國文學的里程碑，亦標誌著亞洲文化在全球舞台話語權的提升。評論者敏銳捕捉到韓江作品的社會意涵，強調其小說不僅是文學創作，更是對韓國社會政治現狀的有力批判，尤其深刻描繪了父權社會下女性困境及歷史創傷。文學不僅能反映個人經驗，更能觸及普遍的人類情感，並為讀者提供了重新審視歷史、理解文化的契機。

第二篇評論則精闢闡述陳碩文教授著作《航向新世界：現代文人在上海的跨域譯寫》，細膩描繪了二十世紀初上海作為文化熔爐的獨特面貌。評論者點出翻譯文學如何在城市生根發芽，形塑國族認同、世界觀念與左翼思潮，並深入探討譯者作為跨文化擺渡者，如何以獨特的視角促成思想的流動與轉化。對現代中國知識分子如何透過譯寫實踐回應時代命題，有非常深入的評論。

評論如同輔助線導引我們快速認識文學的多元面向，揭示文藝表象與社會之間的緊密連結，值得我們在閱讀文本時深入思考其背後的現象。

Book Review Editor,

高啓豪 Chi-Hao Kao

June 2025

Resistance Across Different Scales: The Nation in Han Kang's *Human Acts* and *the Household in The Vegetarian**

陳信彰 Hsin-Chang Chen** (國立臺灣大學 National Taiwan University)

In South Korea, returning to a military dictatorship seems well-charged, like a heap of dry tinder waiting for a spark. Yoon Suk-Yeol's martial law declaration on the night of December 3, 2024, could have been the spark, but it was quickly overturned by the National Assembly, not surviving over six hours. Though the martial law imposition was soon botched, people would mostly see it as the latest echo of the global right-shift trend or skepticism toward neoliberal capitalism. Since the 1980s, capital-oriented neoliberalism has been the dominant political force in the globe. It has spread from the West to democratize and modernize non-Western economies. As critics would argue, this process of Westernization resulted in a prolonged persistence of Western conservative principles, especially following the leadership of Ronald Reagan in the US and Margaret Thatcher in the UK (Fosci 49). Yet, as early as in the late 2010s, this Westernizing process has met some resistance, including neo-authoritarian regimes or various forms of national protectionism. Both can be taken as a response against neoliberal capitalism because such a West-centric impact has threatened the existence of many regional diversities and political autonomy.

In South Korea, the resistance against neoliberal capitalism is embodied as reinforcement of national interest. As the ruling party at that time, the pro-PPP (People Power Party) populace of South Korea argue that the martial law imposition is to jump on the bandwagon of moving toward

* I would like to express my sincere appreciation and gratitude to Professor Li-Hsin Hsu from the Department of English at National Chengchi University, especially for her belief in my ability to undertake this critical commentary on Han Kang. Gathering references for this commentary has been challenging as the shifting and uncertain political landscape has occasionally delayed my progress—specifically with regard to how I position Han Kang's literary achievement in relation to the country's politics. However, Professor Hsu Li Hsin's support and patience have given me the time needed to complete this piece.

** Ph.D. candidate of the Department of Foreign Languages and Literatures, National Taiwan University

the right for the purpose of strengthening national protectionism, either against Westernization or the Communist force of North Korea. However, this defense does not offset Yoon's attempted self-coup that brings forth the questionable authoritarian mindset of the leadership of South Korea and its potentially eroding democracy. Major South Korean newspapers, such as *Hankyoreh*, *JoongAng Daily*, and *Yonhap*, claimed that Yoon's plan could be traced back months earlier in the same year, suggesting that the rise of authoritarianism cannot be easily dismissed as a random interference with democracy, but a thoughtful scheme. Fortunately, with several probes into Yoon's insurrection charges in place over the past six months, we can see how resilient the public has been. Nevertheless, it can be ironic to witness the coming of a pro-Yoon documentary (expected to release in February of 2025) defending Yoon's martial law imposition.¹ Despite this pro-conservative documentary, it was announced on June 3 that Lee Jae-myung, the candidate of the liberal Democratic Party, was elected as a new president of South Korea.

Amid this political turmoil that has potentially evoked dark memories of the country's past military regimes, a South Korean novelist, Han Kang, was awarded the Nobel Prize in Literature. The announcement recognizing Han Kang's achievement was made on October 10, 2024, with the formal presentation of the honor taking place two months later, on December 10, 2024. Though the announcement predates Yoon's martial law imposition by two months, the two events are closely related in time. This temporal proximity juxtaposes the celebration of Han Kang's literary excellence with South Korean political crises, creating a striking, albeit unintended, contrast. However contrasting the two events may appear, I argue that the political background of South Korea plays an important role in understanding Han Kang's literature. Another way to put it is that the ongoing political crises in South Korea actually emerge as a rich tapestry or a source of creativity for Han Kang to produce award-winning literature.

All in all, Han Kang's award represents the power of literature to resist violence, particularly in how she illuminates "the fragility of human life" while articulating "historical traumas" (*Han Facts*). In her speech, Han

¹ See also the newspaper "Documentary Defending Yoon's Martial Law Decree Coming in February" (<https://koreajoongangdailyjoins.com/news/2025-01-31/national/socialAffairs/Documentary-defending-Yoons-martial-law-decree-coming-in-February/2232757>).

Kang also emphasizes that her writings aim to uncover the meaning of life by delving into the intricate depths of the human mind, and together aiming to stand resolutely against violence (*Banquet Speech*). More broadly, her writings seek warmth and light amid widespread violence, often symbolized as darkness and bleakness in her narratives (*Nobel Prize Lecture 3*; 5). However, as she notes, these symbols also establish continuity between past and present, ensuring that past violence should never be forgotten (*Nobel Prize Lecture 5*). Therefore, her literature stands as an everlasting critical lens for reevaluating socio-political issues and, meanwhile, maintains a hopeful perspective on actual tragedies (Ways 25-26).

Han Kang's novel *Human Acts* clearly exemplifies this commitment to serve as a critical reflection of socio-political issues. As a work of historical realism originally published in Korean in 2014 and translated by Deborah Smith into English in 2017, the novel offers a literary chronicle of the historical and emotional scars endured by the families of victims of the Gwangju Uprising in 1980. Specifically, the novel portrays the era of military dictatorship under Chun Doo-hwan and the subsequent waves of civilian unrest and militia-led protests (Han, *Human Acts* 78; 115; 187). Though Yoon's self-coup failed, seemingly rendering *Human Acts* less relatable, the novel's vivid depiction of state violence and unjust treatment of the innocent citizens remains a poignant, unwavering reminder of the traumatic histories of South Korea, specifically by carrying allegorical messages to warn the public against contemporary political concerns.

This reminder takes wing after Han Kang wins the Nobel Prize in Literature. The Nobel honor not only amplifies Han Kang's literary voice, but also brings global attention to South Korea's complex histories. With such an honor, many aspects of the South Korean historical and social issues are found to resonate with the rest of the world. Hence, Door Ways argues that the depiction of human violence and political cruelty in *Human Acts* transcends the confines of South Korea's historical events, speaking instead to universal aspects of human condition (Ways 20). In short, *Human Acts* is believed to address universal human conditions despite its South Korean setting, and to achieve that, the novel blends historical realism with imaginative elements, such as multiple narratives and a non-linear time structure, to make the storytelling more engaging than a mere collection of dry historical facts.

The narrative and temporal structure of *Human Acts* is experimental, besides being historical and semi-autobiographical. It opens with the perspective of a 15-year-old boy, Dong-ho, who catalogs corpses in the aftermath of state-driven violence. Han Kang deliberately contrasts such a relatively naïve narrator against the hegemony and military violence of the country. The following chapter shifts to a second-person perspective, narrated by the souls of civilian corpses. These souls are described as “shadows,” newly departed from the corpses but remaining in a liminal state between “wakefulness” and “consciousness” due to their unrestful deaths (Han, *Human Acts* 49; 55-56). These shadows’ interactions expose the nation’s brutality: “Every time our shadow-boundaries brushed against each other, an echo of some appalling suffering was transmitted to me like an electric shock” (*Human Acts* 62). Their voices also pose rhetorical questions about human cruelty: “Is it true that human beings are fundamentally cruel? Is the experience of cruelty the only thing we share as a species?” (*Human Acts* 133).

Rather than openly criticizing state violence, Han Kang threads these grieving statements together to prompt a poetic meditation on the subject. Then, the souls’ narratives fluctuate between present conversations—the ones that take place during the uprising with regard to how innocent citizens, regardless of their age, are murdered by the internationally-banned “lead bullets”—as well as past childhood memories—the ones where the victims’ daily, household activities are unfolded (*Human Acts* 203). The alternating narratives and temporalities highlight the victims’ enduring traumas. In other words, the novel characterizes these perspectival shifts, instead of directly depicting the horrors, to reveal the inescapability of these tragedies as if one should be haunted by traumas even after death. Ironically, the dead are honored with “the national anthem” to make them “something more than butchered lumps of meat,” while the “Taegukgi” (the national flag) hangs among their coffins as if to deny they were killed by soldiers and the nation itself (*Human Acts* 171; 17, emphasis removed). Such a sarcastic tone can be a very effective literary strategy to enhance readers’ empathetic involvement.

However, the causes of South Korea’s militarism are often underdiscussed in the existing criticisms. The country’s militarism is believed to stem from its nationalism, one that is deeply rooted in Confucianism, Buddhism, and the Tangun myth. As Seungsook Moon also explains, the traditional South Korean ideology primarily stems from

Confucianism, whose subtext is androcentric and is often adopted to justify the military and patriarchal regimes of the country until the 1980s (Moon 35; 50). Besides, the Tangun myth that prioritizes manhood over womanhood and the Buddhist transcendence that prioritizes collectivism over individualism are another two ingredients that contribute to South Korea's militarist nationalism (40-41; 48).² The Japanese occupation of South Korea from 1910 to 1945 is yet another colonial history that reinforces South Korean nationalism. Together, these ideological pillars reflect a nuanced difference against the political and cultural ideologies of the West. From this perspective, we can infer that the histories of South Korea do not necessarily offer a universal account of human violence. The experience can be exclusively South Korean instead. Therefore, what Han Kang depicts in *Human Acts*, emphasizing the androcentrically military background of the country, should not be entirely understood as a universal condition.

Moreover, South Korea's nationalism was largely legitimized by Park Chung Hee. As a South Korean politician and president during the postwar period, he resorted to authoritative means to modernize the country. His political reforms also included a sentiment of anti-Japanism and anti-Communism of North Korea despite his underlying emphasis on militarism and values of Confucian hierarchy. Specifically, the difference against the West lies in South Korea's restoration of tradition for the sake of national protectionism, though one may interpret this kind of nationalism as implicitly militaristic. Yet, as viewed from the histories of South Korea, the historical violence leading Han Kang to write about the Gwangju Uprising can be specifically concerned with the South Korean context, despite some beliefs speculating that she does not intend to paint a picture of the South Korean society because cruelty can be universal as if carved into the human genes (Way 34).

² Hwanung, the son of the sky god Hwanin, descends to Earth and tasks a tiger and a bear with remaining in a cave for one hundred days to become human. Only the bear succeeds and transforms into a woman who gives birth to Tangun. This transformation of the bear into a woman symbolizes sacrifice and suffering, often regarded as the foundational symbol of women. The bear-woman's role, as Moon argues, represents a prototype of a nationalist womb which underscores her contribution to the creation of the nation (41). Tangun later becomes the king of Gojoseon and emerges as a symbol of national identity. Overall, this myth reflects how Korean nationhood, specifically in the South Korean context, is rooted in a gender hierarchy or a kind of "a patriarchal strategy" (42).

While *Human Acts* deals with violence on the scale of a nation, the scale of violence shrinks to a domestic level in Han Kang's *The Vegetarian*. Han Kang published *The Vegetarian* in South Korea in 2007 and initially wrote it in Korean. Deborah Smith's translation of the novel into English in 2015 played a significant role in helping the author win the Man Booker International Prize in 2016, and to this day, the novel has been translated into over thirty-two languages worldwide.³ This novel features Yeong-hye, a female protagonist whose silence and conscious bodily metamorphosis into a plant symbolize her resistance against a patriarchal household. Unlike *Human Acts*, which is rooted in historical incidents, *The Vegetarian* is fictional and speculative, appearing to lack a solid historical context. That being said, some may argue that the protagonist's bodily transformation only carries metaphoric significance or is a product of the protagonist's delusion, which makes it academically difficult to justify her resistance against patriarchy through her arborealization into a tree.

Its earlier vision, "The Fruit of My Woman" published in 1997, by contrast, does depict a literal morphing of a woman into a fruit tree that bears fruit for her husband. Han Kang explicitly states that *The Vegetarian* retains several "formal elements" from its earlier version (28). In fact, the two works are thematically connected, in spite of the fact that the tone of *The Vegetarian* is darker and more agonizing than its predecessor (29; 36). Yet, the textual connection between them can support the interpretation of the trope in *The Vegetarian*. Collectively, the trope of a female

³ Given the worldwide translation of Han Kang's books, it remains a controversial topic. In general, the translation of South Korean literature is criticized for potentially recolonizing South Korea and undermining its nationalism (Godley 194; 198). However, Door Ways argues that these translations actually help raise global recognition of South Korean literature and draw attention to the country's violent histories (Ways 20-21). Han Kang herself also believes that the translation of her writings does not diminish the value of the original texts (Ways 30). Other references that analyze Deborah Smith's suspected mistranslation of the original works, regarding stylistic and semantic alteration, and a distortion of South Korean culture, include Charse Yun's "How the Bestseller *The Vegetarian*, translated from Han Kang's Original, Caused an Uproar in South Korea" in *Los Angeles Times*, Jiayang Fan's "Han Kang and the Complexity of Translation" in *New Yorker*, Claire Armitstead's "Lost in (Mis)translation? English Take on Korean Novel Has Critiques up in Arms" in *The Guardian*, Wook-Dong Kim's "The 'Creative' English Translation of *The Vegetarian* by Han Kang," and Kyongjo Woo's "A Comparative Analysis of Han Kang's *The Vegetarian* and its Translation from the Perspective of Ecofeminist Themes: Focusing on Transitivity and Appraisal Analysis within the Systemic Functional Grammar Theory."

metamorphosis critiques Western masculinity and, more precisely, the Confucian patriarchy ingrained within the traditional South Korean family structures (Moon 51). Speaking of Confucian influences, critics also emphasize the ancient Chinese value of group harmony, where collectivism takes precedence over individualism, in their interpretations of *The Vegetarian* (Ways 44). Therefore, Yeong-hye's transformation is to challenge these ideologies that violently marginalize females. For this, Han Kang raises open-ended questions aiming to explore the paradox of becoming a plant: "Can a person ever be completely innocent? To what depths can we reject violence? What happens to one who refuses to belong to the species called human?" (Han, *Nobel Prize Lecture* 2-3).

One of the prominent discussions about *The Vegetarian* is whether the protagonist chooses to transform into a plant or if she is forced to perform such a bodily transformation. In "Radical Act and Political Withdrawal in Han Kang's *The Vegetarian*," Sulisty Ningtyas argues in favor of the idea that the protagonist's action is triggered by her deliberate consideration (81). Yet, whether Yeong-hye's seemingly surreal arborealization represents a self-redemptive and wishful journey should remain a paradox. In the novel, the depiction of Yeong-hye's rejection of meat and any forms of nutrients, including water, serves as a critique of "human brutality" or, namely, a "world of mingled violence and beauty," a perspective aligned with Han Kang's philosophy in creative writing (Han, *Vegetarian* 153; Patrick np). As a result of the female protagonist's dietary choice, her body is reduced to a "skeletal frame of an invalid" (Han, *Vegetarian* 18). Though she eventually transforms into a "mutant animal that had evolved to be able to photosynthesize," she experiences a slow death toward the end of the novel simply because she does not contain "the chloroplast" to produce nutrients like other plants (Han, *Vegetarian* 91; Ningtyas 82). Given the textual evidence, Yeong-hye's process of bodily metamorphosis results in starvation and corporeal death, raising doubts about whether her alternative existence beyond the human form can free her from the constraints of patriarchy.

However, beyond a literal interpretation, Yeong-hye's refusal of sustenance leads to her *liberative* transformation into a plant. On the one hand, in *Radical Botany: Plants and Speculative Fiction*, Natania Meeker and Antónia Szabari argue that the literary trope of becoming a tree may cater to male fantasies (174). This motif operates within a broader context of reinforcing the biopolitical control and domestication of female bodies

and their subjectivities. To loosen our grip on this dilemma, we might need to positively analyze Yeong-hye's ultimate death at the end of the story. Rather than fulfilling male projections by transforming into a vegetal existence, she is instead taken away by an ambulance to an unknown destination (Han, *Vegetarian* 180-81). The ambulance—not a hearse indeed—can symbolize a trace of hope for Yeong-hye, albeit being an uncertain one. In other words, there is a chance of salvation where she might presume her vegetal existence while maintaining her vital signs on a corporeal level.

In addition to the debate on Yeong-hye's struggle either as liberative or captive, a psychological perspective is another common interpretative angle to interpret the significance of her metamorphosis. Some interpretations view Yeong-hye's abstention from nutrients as a sign of mental illness, suggesting that she will be catapulted into another abyss of illness, whereas most other critics would interpret this phenomenon as a successful, albeit impulsive, escape from patriarchal exploitation (Casey 354; Zolkos 102; 105; Biscaia 111). Nevertheless, we should not approach Yeong-hye's condition from a psychological point of view, as this will reintroduce the idea of phallogocentrism privileging masculinity in the production of meanings. This viewpoint is also echoed by Caitlin E. Stobie, Daniel Marchalik, Ann Jurecic, and Jharna Chowdhury (Stobie 795; Marchalik and Jurecic 147; Chowdhury 2-3). Nor should we understand the negotiation between Yeong-hye's vegetal becoming and the non-vegetal world as a set of easily-opposable dichotomy, for this view will simplify the complex relation between the two. Instead, in the process of becoming, Yeong-hye's physical state is gradually decomposed into "biochemical matter[s]" that will blend into "the soil" to nurture other "vegetal life" like "trees" (Casey 350). This perspective brings forth a profound transspecies connection between Yeong-hye and the natural world, powerfully challenging a more reserved view that fails to perceive the potential of her metamorphosis, namely, relating to the question of whether the trope of metamorphosis can confront traditional societal constructs. In brief, Yeong-hye's metamorphosis can be non-liberating if judged from a psychological and realist point of view, but it can be fully liberating if judged from an ecocritical and materialist perspective that prioritizes the eco-ability of Yeong-hye's organism.

Since becoming a plant is related to a transspecies connection, several critics also adopt an ecofeminist interpretation of *The Vegetarian*.

Conventionally, female bodies are objectified by being situated closer to nature, as evidenced by Lynda Birke's *(Un)Stable Relations: Horses, Humans and Social Agency* and Nancy Tuana's *Racial Climates, Ecological Indifference: An Ecointersectional Analysis*. Their works show how the traditional Western thinking regards female bodies as biologically determined, further entrenching females' marginalization and exploitation by dominant forces. Interestingly, Yeong-hye bears an inexplicable Mongolian mark, described as "something ancient" and "pre-evolutionary," and with this mark, she is rendered "more vegetal" (Han, *Vegetarian* 83). On the surface, this bodily mark seems to endorse the traditional Western thinking of aligning females with nature, and her metamorphosis into a plant can be considered a metaphor following this tradition. However, as Lee Myung Ho observes, Yeong-hye's bodily mark suggests a kind of "remnants of vegetability in human body" (112). In other words, rather than employing an empirical or humanistic lens that highlights the fundamental distinction between humans and plants, I argue for the interconnectedness between them. The human corporeality can be reimagined not as a self-enclosed entity but as a medium that reconnects itself to the natural world, as readily exemplified by Yeong-hye's status. With this, Han Kang seems to advocate for the ethics of an ecological perspective, revealing a new "life system" as a radical critique of human-centered modes of existence that prioritize destroying other lives rather than reconnecting them (103-5). That the body can be a site of conceptual conflicts resonates with contemporary discussions on identity, autonomy, and gender politics, and it is to argue that Yeong-hye's morphing into a vegetal body is to position herself outside or against patriarchal constructs and to escape the societal responsibilities put on her.

To conclude, the military regimes of South Korea and the patriarchal oppression of women play a crucial framework for Han Kang's literature. While much emphasis is placed on the global resonance of her books, I argue that the context is specifically rooted in South Korean history and culture. Han Kang explores the historical backdrop of the Gwangju Uprising in *Human Acts*, which utilizes historical realism, and employs the surreal metamorphosis in *The Vegetarian*. More importantly, it marks a historically significant moment in the androcentric histories of South Korea to witness a female writer like Han Kang, who takes on the mission of portraying her country's histories on a global stage. Her efforts to confront socio-political realities have inspired resistance both within South Korea and beyond, which eventually culminates in her receiving the Nobel Prize in Literature.

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翻譯跨域：評陳碩文《航向新世界： 現代文人在上海的跨域譯寫》

梁右典 Yu-Tien Liang (黃岡師範學院 Huanggang Normal University)

「自我」與「世界」的關聯是二十世紀中國近代文學史不可或缺的議題，切入角度因立場而異，如從「政治主體」出發，以「左翼文學」作為研究進路是過去常見的思考角度，「國」與「國」的文化認同問題，在此顯得更為凸出。回到當時背景來說，梁啟超（1873-1929）明白指出：「曾幾何時，（吾）為 19 世紀世界大風潮之勢力所簸蕩、所衝擊、所驅遣，使我不得不為國人焉，浸假使將不得不為世界人焉」（梁啟超，1989：185）。從「國人」至「世界人」似乎彈指間事，轉換速度亦反映心態遽變。近現代國家意識的相互角力，呈現此段時期之轉型變化，亦不得不先從「翻譯」著手。不同國家於接觸互動之際，翻譯過程不僅僅是字詞句層面意涵，更涉及彼此的藝術形式與感覺結構如何被理解，因此「跨域語境」與「理論旅行」都是對於翻譯「本色」要能提出一定程度商榷，並非僅是工具性思維所能概括（薩依德，2009）。近來政大陳碩文教授《航向新世界：現代文人在上海的跨域譯寫》即是對此議題進行探索，以上海為考察中心，成為跨域譯寫「神聖」之地的上海，現代文人在此大放「譯」彩，但實際內容的系列闡述仍有待研究，本書正好填補該塊圓地的空白。書中結構分成三編六章，包括「翻譯現代：國族想像與域外文藝傳釋」、「前鋒左翼：唯美派與異國新潮文藝譯介」、「亦是摩登：通俗文人文藝譯介與跨域實踐中的現代圖景」等等，要點說明如下：

第一章〈「瞭解全個世界：施蟄存與弱小民族文學譯介」〉，近年《施蟄存譯文全集》出版，施蟄存（1905-2003）譯文涉及題材廣泛，同時也反映譯者對於文化脈絡的看法，特別值得留意是「弱小民族」的概念生成與原因解釋，認為「我們的一呼一吸，都已與世界上任何一個隅角裡的人息息相通」（施蟄存，2003：19）。不但與當時所處情境呼應，亦有認識、走向世界的願望。第二章〈譯述藝術：傅雷與《藝術旬刊》中的現代文藝〉，探討「藝術」概念如何在中國催生成型，透過閱讀傅雷與《藝術旬刊》的文本，更有系統進行脈絡化閱讀，凸顯「國族文化想像和參與世界藝壇之理想實仍難以切割」（頁 85）。第三章〈左翼與摩登之外：葉靈鳳《現代小說》中的文藝譯介與小說創作〉，所說如同施蟄存描寫下的世代：「我們是租界追求新、追求時髦的青年人」（張英鳴，2006：48）。且文中特別留意種種關係不斷「協商」（compromise）的結果（頁 121），亦更加凸顯「現代中國革命文學發展的階段性和複雜性」（頁 127）。第四章〈唯美

者的戰歌：朱維基、芳信二戰前後的異國詩歌翻譯），作者參酌情感史（*the history of emotions*）的寫法，論述文藝作為一種實踐活動經歷什麼樣的轉變，於文學史發展脈絡又有什麼意義。翻譯過程不僅是意譯，也彰顯「唯美」性質，一方面作品反映現實處境，也達到美麗謊言的效果，透過翻譯文學的手法，適度模糊社會與詩作的距離，書中留意王爾德（Oscar Wilde, 1854-1900）所謂「謊言，關於美麗不真實之物的敘述，是藝術自身之目的」（*Lying, the telling of beautiful untrue things, is the proper aim of Art*）之語，頗有畫龍點睛之效，亦適用於此處脈絡討論。第五章〈紳士怪盜的跨文化行旅：孫了紅的「東方亞森羅蘋」魯平奇案〉，彰顯「偵探小說作為一種世界文學類型之跨界流動」（頁202），某種程度上亦是批判當時法律制度，偵探形象相對於法律規範，用意在於訴諸法外正義的意涵。作者敏銳察覺到偵探小說的內涵與《二十年目睹怪現狀》的主角「九死一生」有許多類似之處，因而使得「紳士怪盜的跨文化行旅」在中文世界裡帶有更多「混雜性」（*hybridity*）色彩（頁224），這就表示偵探小說不僅僅是語言翻譯，而有更多相互對照的豐富視野值得留意。第六章〈演練現代性：陸澹盦偵探影戲小說的跨界譯寫〉，將影戲與小說綜合觀察，並從「衍生小說」（*tie-ins*）眼光看待「通俗現代主義」（*vernacular modernism*）現象，巧妙地將電影戲劇的敘事風格與中國流行小說連繫起來，帶有某種「親和性」（頁248），值得加以論述（李歐梵著，毛尖譯，2000：99）。

綜觀全書章節，「翻譯」與「跨域」是其中關鍵詞彙，亦是核心概念。上海既是地理空間，也是往來流通的國際城市。此種翻譯跨域的論述出發基礎，是由上海文人在上世紀前半葉，就具有的文化雙重意涵：第一，上海如同普拉特（Mary Louise Pratt）所說是成為「文化接觸地帶」（*contact zone*）的區域（Mary Louise Pratt, 1991:33-40），具有「媒合」與「轉譯」各種國際訊息的第一手報導，過去多留意報紙，較少關注小說翻譯情形。因此，當中反映的文化面貌包括當時最即時的訊息，透過作者考察不論是在數量與質量，上海文人都能在短期間中達到極高的翻譯水平。當中的翻譯現象值得留意，作者更凸顯翻譯文化帶來的種種省思。

過去學界未形成充分的「譯界研究」，如今則可再凸顯當中的「感覺結構」，也就是譯者如何表現他們對於世界的看法。換言之，如果將翻譯僅僅視為工具，此種思維意義過於狹隘，如今需要改變重新，帶入更為多元視野，方能彰顯譯者的主體意涵。透過文本翻譯，如此方能達到與其他文化的關係，正是處於一種動態的「交互性」。第二，翻譯也是一種「認同」概念的開展，特別對於施蟄存的研究，論述他對「弱小民族」的概念，既反映當時譯者心態，亦涉及多種「認同」意義開展的可能性，包括文化認同與身份認同，也正是與上述所說「感覺結構」密切相關。一言以蔽之，透過

翻譯能夠明確察覺到對立概念的消弭，自我與他者、國內與國外、本土與世界之間找到端倪，以致於能夠相互呼應，同氣連枝的「世界人」理解模式。例如偵探小說與《二十年目睹怪現狀》的內容，在「以異為新」的視角下重新省思在翻譯過程中的交涉對話，作者梳理此中意涵是很有意義的學術工作。

「現代性」則是當中另一議題值得闡述。作者對於「現代性」的理解，透過上海文人翻譯的史料逐步開展，置於「跨文化現代性」(*transcultural modernity*)的範疇之中。因此，二元對立的思考模式並非此時譯界主調，但是過往的確較為忽略以譯者為主體的視角。所以，書中議題開展的重點似乎不是從翻譯須「信達雅」的「規範性」入手，而是更加關注譯者的「主體性」論述 (Hsiao-yen Peng, 2010)。上海文人對於「現代性」並沒有明確說法屬乎何種概念，留給研究者許多詮釋空間，如今更透過翻譯眼光的確能讓讀者看到「關係取代本質主義」的種種現象 (Erwin Koppen, 1984)。於是作者將「現代性」與「世界性」適度結合起來。書中透過數個翻譯案例作為說明，可以增加對此議題之認識，並認定譯者主體之現象不容忽視。此外，作者也留意歌德早在 18 世紀就提出對「世界文學」(*Weltliteratur*)的認識 (David Damrosch, 2003)，當時所提的內容大致聚焦於交流和閱讀模式 (*a mode of circulation and of feeling*)。作者留意學界要點接續而發，大抵上是將「世界文學」視為一種「概念」，認為「重視此一概念的流動性特質，無疑更有意義」(頁 21)，賦予「世界文學」有時代意義，當然也不可避免有國族想像的問題。

國族涉及政治議題，書中另條主軸應可從「左翼世界主義」(*leftist cosmopolitanism*)而發，另闢論述園地；主題設定較為接近者是關乎反抗壓迫、追求公平正義、以及對於弱小民族作品的譯介。但是，作者對此較少進行開展，似乎將此僅僅視為另外一種「聲音」表達。例如書中提到：「但吶喊以外，也有陰鬱、笑聲和情懷」(頁 276)，即可作如是觀。再如偵探小說的引入，以及通俗劇電影形式的方法採用，使得譯文也能達成一定程度的「親和性」——特別是置於「世界文學」與「電影戲劇」的討論框架確是如此。如此至少會再衍生兩條思考路線，需要加以說明：第一，翻譯小說與傳統文化的關聯為何，能夠與唐人傳奇、宋人筆記與明清小說產生什麼樣的關係。第二，翻譯小說透過電影敘述手法的推廣更為人知，鏡頭畫面與視聽語言都是當時新型產物，節奏感不同於文字韻律，因而造成一種廣義的「互文現象」。例如翻譯小說成為劇本，結合電影演出，搭配讀者閱讀，延展性與開拓性顯得更為蓬勃發展。書中引用古老的義大利俗諺「譯者，逆者也」(*Traduttore, traditore*)的思考 (頁 290)，強調回到譯者之心與作者之意，當中來回往復的過程，既是「心知其意」，也是譯者在「交互脈絡」中的不斷前進。如何調節當中論述是很重要的思考方向。因此，作者將翻譯視為「逆反」的意涵，既在此書研究中能夠得到

較好地理解，也是堅持「跨越、流動的視野，不斷叩問、敲擊所有的堅固壁壘，不斷尋求對話和理解」（頁 290）。

而在此「跨越」與「流動」的視野中，作者也嘗試要建立一種翻譯研究的可能方法，積極關注譯者的情感與生活、理想與抱負等等背景，某種程度上可將翻譯工作作為一種文化認知的現象。借用並調節 Nussbaum 所說，以此（此指「翻譯」）視為一種以情感出發的認知功能（Nussbaum, 2013），能夠標誌所在的世界面貌。因此，翻譯過程的意涵可再分為兩種，第一種是作為書中分析對象的譯者，第二種則是對此譯者「再解譯」的過程，例如本書作者所作的工作，基本上是強調上述所分的第二種意涵。以上兩種面對翻譯過程的想法不盡相同，但是他們的共同點在於對「主題性」（thematic）的聯結充滿興趣，例如「弱小的」、「唯美的」、「偵探的」等等，當中都具有充足開放性的內涵可供討論，某種意義上亦是從中進行「主題化」（thematize）的定位與闡釋。在此可以借用 Stalnaker 的「橋樑概念」作為理解上的幫助（Stalnaker, 2006），以致於「同時為個別案例開放更好的具體化空間」（王華，2025:188），並保持一種動態平衡開放的論述策略。

最後，本書對於中國近現代文學史的架構理解有何幫助，以及還有哪些未竟之業值得拓展，可以再就此進行論述。本書是從翻譯角度出發以構成文學史視野下的重要環節，最重要的信號即是「世界文學」進入譯者識田而逐步開展。這就不同於傳統的「格義」方式，而是更多地賦予翻譯工作一種「交互主體」的概念，或稱為是一個「平臺」的充分展演，即「介於兩者之間（in-between）的「地帶」——乃是接續 Thomas Moore 而發（Thomas Moore, 2000:34），作者書中亦有提及（頁 285）。一般來說，對翻譯的印象是強調信達雅，但在本書意涵的闡釋卻是允許模糊性（ambiguity）與流動性，正是因為翻譯工作即是一個有待發掘的文化現象，如何取得一定平衡論述，涉及跨文化思維與實踐則是接下來的挑戰。現代文人在上海的跨域譯寫在本書的重要性於是彰顯，扮演領頭羊的角色，更有待未來更多論述的可能性，結合思維方式的符號轉換、感覺結構的重新嵌入、以及文化特色的相互參照等等，如同本書所說「期能為中國現代文學與文化研究，開啟更豐富的詮釋空間」（封底語）。

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《外國語文研究》專刊徵稿啟事

主題：流動、遷徙與認同

客座主編：Jinhyoung Lee (韓國建國大學移動研究人文學院)、

張景安 (國立政治大學阿拉伯語文學系)

摘要截稿日期：2025 年 7 月 31 日

人類遷徙自約 12,500 至 10,000 年前開始，由遊牧生活逐步轉向農耕聚落 (de Hass, Castles and Miller 2020)。在邁入二十一世紀的當下，全球社會見證「遠距移動之日常化」(Shin and Lee 2022)，其驅動因素涉及政治、經濟、社會與氣候等多重層面。當代世界可謂「史上人與物體移動距離最遠、頻率最高、速度最快的時代」，「人類活動的各個領域皆日益受運動 (motion) 所界定」(Nail 2018)。無論是人類、非人類，或超越人類範疇的移動現象 (more-than-human mobilities)，移動性的概念可視為人類歷史的核心要素，形塑著我們所處的世界。在此脈絡下，作為人類移動現象的遷徙不僅影響個體，也深刻地影響遷出地與遷入地的社會結構。遷徙的影響涵蓋區域性、國內與國際層面，並涉及政治經濟、文化與環境等多維領域。當人們自願或非自願地跨越國界，他們的身份認同往往會在遷徙過程中受到重新建構或混融，因其需在原生文化與新環境之間進行身份協商。換言之，遷徙顛覆了傳統的身份概念，促使個體在文化傳承與新環境適應之間尋求平衡。因此，理解移動性、遷徙與身份文化認同之間的相互作用，對於探索全球化與高移動性社會中的新興社會現象及生活方式至關重要，並有助於人們邁向更加公平與正義的未來。

本專刊預定於 2026 年 6 月出版，本期將致力於探討移動性、移民與身份認同等相關議題，歡迎針對下列相關議題投稿：

- 人類移動或遷移的敘事化
- (後)殖民視角下的遷徙歷史
- 移動性的情感與情緒維度
- 針對遷徙 / 移動性敘事之創新論述與方法
- 遷移倫理與政治
- 高度移動時代下的人類生存：遷移與人權
- 全球遷徙的日常化與文化身份轉變
- 環境移動性：非人或超人類移動現象
- 文學與語言中的過渡與移動性
- 語言的遷徙與移動性
- 另類或未來移動性的文化想像

歡迎投稿以上未列出的主題。我們也鼓勵英語以外語言的投稿。我們徵求提供流動、遷徙與認同新觀點、以理論及研究方法創新相關議題的全文稿。英文稿件字數限定為 6,000 至 10,000 字。如果使用中文或其他語言撰寫稿件，作者必須提供英文摘要（一頁 A4 之長度）供初步審查。中文稿件字數限定為 12,000 至 20,000 字。本專刊也接受相關主題的書評和研究紀要，英文字數約為 2,000 至 3,000 字。

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《外國語文研究》成立於 2004 年，是一個經過嚴謹同行審查，提供全文開放取用的專業學術期刊。本期刊立足外國語文本位，以文學、語言、教學與文化為中心，著眼於全球視野及對話的學術期刊。本期刊期望融會文學、語言、教學、文化，進而探討各該文學、語言、教學、文化的變遷、轉型及碰撞與交融中所產生的重大理論與實踐問題。《外國語文研究》目前收錄於臺灣人文及社會科學引文索引資料庫、國家圖書館臺灣期刊論文索引系統、華藝線上圖書館、凌網科技臺灣全文資料庫、碩亞臺灣引文資料庫、聯合百科臺灣人社百刊、元照月旦知識庫。

如有任何與專刊相關問題，歡迎聯繫客座主編：Jinhyoung Lee (gespenst@konkuk.ac.kr)、張景安 (chingan@nccu.edu.tw)。

Jinhyoung Lee 副教授現任韓國建國大學移動性人文學院，同時擔任《移動人文學》期刊的副主編，並為國際交通與移動史學會 (T2M) 執行委員會成員。除了個人著作《1930 年代後期殖民地朝鮮小說理論》(*Theories of Novel of Colonial Korea in the Late 1930s*)，他亦參與多部學術著作的韓文翻譯，包括 Haim Hazan 的《反混融》(*Against Hybridity*)、Peter Merriman 與 Lynne Pearce 主編的《移動性與人文學》(*Mobility and the Humanities, 2019*)、Linda Hutcheon 的《改編理論》(*Theory of Adaptation*)，以及 Gary Saul Morson 與 Caryl Emerson 合著的《巴赫金散文學》(*Bakhtin's Prosaics*)。其研究興趣涵蓋現代韓國小說與文學批評、離散、混雜性、後殖民及移動人文學等議題。

張景安副教授任職於臺灣國立政治大學阿拉伯語學系。主要研究領域涵蓋中東地區（特別關注大敘利亞地區）、商業社群、移民與難民問題。其研究成果發表於《國際移民》(*International Migration*)、《移民與難民研

究雜誌》(*Journal of Immigrant and Refugee Studies*)、《社會包容》(*Social Inclusion*) 以及《洞察土耳其》(*Insight Turkey*) 等國際期刊。此外，他亦參與書籍章節撰寫，作品收錄於《Routledge 中東離散手冊》(*Routledge Handbook on Middle East Diaspora*) 及《敘利亞衝突中期的行為者與動態權衡：在抗爭政治、軍事化與政權韌性之間》(*Actors and Dynamics in the Syrian Conflict's Middle Phase: Between Contentious Politics, Militarization, and Regime Resilience, Routledge/St. Andrews Syrian Studies Series*)。

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Ching-An Chang (National Chengchi University, Taiwan)

Abstract Submission Deadline: 31 July 2025

Human migration began to transition from an itinerant and nomadic lifestyle to agrarian settlement around 12,500–10,000 years ago (de Hass, Castles and Miller 2020). The 21st century is witnessing “the routinization of geographically distant movement” (Shin and Lee 2022, 1) mainly for political, economic, social, and climatic reasons. It is a time when “[m]ore than at any other time in history, people and things move longer distances, more frequently, and faster than ever before,” when “every major domain of human activity has become increasingly defined by motion” (Nail 2018, 1). Referring to all types of human, non-human, or more-than-human movements that take place locally and globally, the concept of mobility can be seen as a fundamental aspect of human history, shaping the world in which we live. In this sense, migration, as human mobility, affects not only individuals, but also the societies that produce and receive migrants. The implications of migration can manifest at domestic, regional, and international levels, as well as in the political-economic, cultural, and environmental spheres. As people move across borders, either voluntarily or involuntarily, their identities are often renewed or hybridized through interactions with the new environments they transit or relocate to. That is, migration disrupts traditional notions of identity, requiring individuals to navigate between their heritage and the culture of their new environment.

understanding the interplay between mobility, migration, and identity is essential for exploring newly emerging societies and lifestyles in an increasingly globalized, mobile world, as we aspire to a more equitable and just future.

This special issue of Foreign Language Studies, slated for release in June 2026, will be dedicated to exploring issues associated with mobility, migration, and identity. Submissions addressing the following topics are invited:

- Narrativization of Human Mobility or Migration
- (Post)Colonial Histories of Migration
- Emotions and/or Affects of Mobility
- Creative Responses and Approaches to Mobility or Migration
- Ethics and/or Politics of Migration
- Human Lives in the Age of High Mobility: Migration and Human Rights
- Routinization of Global Migration and Changes in Cultural Identities
- Environmental Mobilities: Non-human or More-than-Human Mobilities
- Migration and Mobility across Literatures and Languages
- Migration and Mobility of Language
- Cultural Imagination of Alternative or Future Mobilities

Contributors are welcome to address issues or topics not listed above. We seek full-length articles that offer a fresh perspective, grounded in theory, and potentially controversial, on a major issue or issues related to mobility, migration, and identity. Full-length articles, written in English, should range from 6,000 to 10,000 words. If manuscripts are to be written in Chinese or other languages, authors have to provide an English abstract for initial review. Full-length Chinese articles should span 12,000 to 20,000 words, adhering to the same academic rigor, and delving into theoretical frameworks. The special issue also accepts book reviews and research notes of around 2,000 to 3,000 words on a related topic.

※Timeline

- Abstracts due: 31 July 2025
- Notification of full submission invitation: 15 August 2025
- Papers due for peer review: 31 October 2025
- Review decision: 30 January 2026
- Final papers due: 15 April 2026
- Publication date: 15 June 2026

Foreign Language Studies, founded in 2004, is an open-access peer-reviewed journal of foreign literature, language, teaching, and cultural studies, and one of the most well-established academic journals in Taiwan. As a multi-lingual journal, it is dedicated to the interdisciplinary exploration of literature, language, teaching, and culture. It focuses on the emergence of global vision and dialogue by addressing theoretical and practical issues arising from the encounter of various literatures, languages, teachings, and cultures around the world. It is currently indexed in Taiwan Citation Index - Humanities and Social Sciences, NCL Taiwan Periodical Literature, Airiti Library, HyRead Journal, Taiwan Academic Citation Index, Taiwan Journals Search, and YueDan Knowledgebase Index.

We welcome inquiries and proposals for co-authored contributions. Please contact the co-editors: Jinyoung Lee (gespenst@konkuk.ac.kr) and Ching-An Chang (chingan@nccu.edu.tw).

Jinyoung Lee (PhD) is an Associate Professor at the Academy of Mobility Humanities, Konkuk University, South Korea. He is Associate Editor of *Mobility Humanities* and a member of T2M's Executive Committee. In addition to his book, *Theories of Novel of Colonial Korea in the Late 1930s* (2013), he has (co)translated Haim Hazan's *Against Hybridity* (2020), Peter Merriman and Lynne Pearce's collection, *Mobility and the Humanities* (2019), Linda Hutcheon's *Theory of Adaptation* (2017) into Korean as well as Bakhtin's *Prosaics* by Gary Saul Morson and Caryl Emerson (2006). His interests include modern Korean fiction and criticism, the themes of diaspora, hybridity, (post)coloniality, and mobility humanities studies.

Ching-An Chang (PhD) is an Associate Professor in the Department of Arabic Language and Culture at National Chengchi University, Taiwan (R.O.C.). His research interests include the Middle East (with a focus on the Levant), business communities, migration, and refugees. His work has been published in *International Migration*, the *Journal of Immigrant and Refugee Studies*, *Social Inclusion*, and *Insight Turkey*. He has also contributed book chapters to both the *Routledge Handbook on Middle East Diaspora* and *Actors and Dynamics in the Syrian Conflict's Middle Phase: Between Contentious Politics, Militarization, and Regime Resilience* (Routledge/St. Andrews Syrian Studies Series).

References

de Haas, H., Castles, S. and Mark J. Miller. *The Age of Migration: International Population Movements in The Modern World*. Guilford Press, 2020.

Shin, I. and Jinhyoung Lee. "Introduction: The Humanities in the Age of High Mobility." *Mobility Humanities*, vol. 1, no. 1, Jan. 2022, pp. 1-5.

Nail, Thomas. *Being and Motion*. Oxford UP, 2019.

《外國語文研究》徵稿章則

113年12月10日第56次編輯委員會會議修訂

《外國語文研究》(以下簡稱本刊)為國立政治大學外國語文學院(以下簡稱本院)發行之外國語文學術期刊。本刊定期出版各國文學、語言、教學及文化相關研究領域之原創性學術論文。

為符合《外國語文研究》多語系、多文化之多元特色，並鼓勵投稿，本刊接受以中文及各國語文撰寫之稿件(以簡體字撰稿者，需自行轉為繁體字後再投稿)，惟論文格式(含引用書目)之編排需符合本刊格式要求。(詳見《外國語文研究》稿件格式要求。)

本刊亦接受書評(Book Review)及研究紀要(Research Note)之稿件。書評乃針對國內外出版之學術刊物所撰寫之評論，篇幅以三千字為原則。研究紀要則就特定議題或研究方法論進行討論，以三千字為原則。本刊也接受邀稿，每期至多以一篇書評或研究紀要為原則。欲投稿書評及研究紀要前請先來信本刊信箱。

本刊採隨到隨審制，全年收稿，定期於每年六月、十二月出版。投寄本刊之稿件不得在其他刊物出版，作者必須於投稿時簽署聲明書，投稿論著之原稿內文中，應避免出現作者姓名、職銜、研究計畫案名等任何足以辨識、推定作者身分的資訊。來稿將送兩名評審委員雙向匿名審查，送審時以同校不互審、師生關係不互審、低階不審高階為原則。本刊受理投稿稿件後，約半年內提交審查結果，通過審查後，校對工作由作者自行負責，並將校正後之文稿電子檔寄回本刊。

投稿之論著如因審查、修改、校對等流程而不及於通過審查後刊登在當期期刊，則順延至下一期刊登，本刊編輯委員會亦得依當期篇幅容量、論文之語種領域及時效性等原則，決定接受刊登文章之刊登期數。通過審查之論文作者須簽署著作權授權書，版權歸本刊所有，其電子版論文將收錄於國家圖書館臺灣期刊論文索引系統、華藝線上圖書館、凌網科技臺灣

全文資料庫、碩亞臺灣引文資料庫、聯合百科臺灣人社百刊、元照月旦知識庫等本刊授權之線上資料庫¹，作者可免費獲得當期期刊乙本及全文電子檔，本刊不另致贈稿酬。

來稿請依下列方式：

1. 請將稿件 Word 電子檔，於 iPress 華藝學術投稿平台線上投稿：

<https://www.ipress.tw/I0208>

2. 聲明書請完成親簽後掃描上傳至 iPress 投稿系統。
3. 依第 56 次《外國語文研究》編輯委員會會議決議，自 2025 年 1 月 1 日起，來稿無須交寄審稿費用（包括一般論文、書評及研究紀要），試行一年。

本章則經本刊編輯委員會會議通過後實施，修正時亦同。

本刊網址：<https://flstudies.org/tw>

¹ 線上資料庫網址：

- 國家圖書館臺灣期刊論文索引系統：<https://reurl.cc/28vba4>
- 華藝線上圖書館：
<https://www.airitilibrary.com/Publication/aPublicationJournal?PublicationID=18130755&type=P001>
- 凌網科技臺灣全文資料庫：<https://reurl.cc/VRq37A>
- 聯合百科臺灣人社百刊：<https://pudpweb.com/fls>
- 元照月旦知識庫：http://lawdata.com.tw/tw/journal_list.aspx?no=1178

研究紀要：簡介與徵稿啟事

《外國語文研究》期刊的「研究記要」(Research Notes)專欄旨在提供促進與語言、文學/文化與教學研究相關各類想法交流之平台，以期促進相關研究學者與同儕思考與對話。

- 有興趣投稿者，請將您的稿件直接上傳至 iPress 系統。稿件也可經由本期刊編輯委員會成員邀請作者投稿。
- 投稿內容將根據其相關性、準確性及語言使用進行審查。投稿採隨到隨審，稿件通過後將於近期刊登，或配合與主題相關之專刊一同刊登。
- 文章字數約 1,000 至 3,000 字（包括參考文獻與註釋，但不含表格及圖表）。

立場文章

對語言、文學/文化與教學研究相關某一議題持批判立場之聲明。

報告與反思

與臺灣舉辦的學術會議或活動相關之報告，儘量於活動舉行後三個月內發表。

回應

對《外國語文研究》先前刊登之文章提出回應或評論，所涉及議題應與當前學術研究議題有所關聯。

新興議題

此專欄討論與語言、文學/文化與教學相關之思想與議題，歡迎學者與研究生投稿至此專欄。「新興議題」提供為尚未完全學術論文之研究題材提供交流探索平台，可（但不限於）以下內容：

- 初步研究發現
- 具潛力之理論發展
- 創新教學法

《外國語文研究》稿件格式要求

一、 稿件格式

(一) 來稿請用 Word 文字檔處理，以 A4 紙隔行橫打

(二) 版面格式

大小： 寬度 16 公分 長度 24 公分

邊界： 上 4 公分 下 3 公分

左 3 公分 右 3 公分

(三) 全文請統一以 9 級字體繕打，中文部分請使用微軟正黑體（若您未安裝微軟正黑體字型，請以新細明體替代），外文部分請以 Cambria Math（若您未安裝 Cambria Math 字型，請以 Times New Roman 替代）。內文行距請一律選擇固定行高 12 點。

(四) 參考文獻如中外文並存時，依中文、英文、其他外文順序排列。中文文獻應按照作者或編者姓氏筆劃排列（如為機構亦同），英文、其他外文則依作者或編者姓氏字母順序排列。

(五) 來稿首頁為中文、英文、其他外文摘要，須載有（按順序）：

1. 論文題目：題目宜簡明。
2. 作者姓名：作者姓名列於論文題目下方。
3. 作者所屬機構名稱：所屬機構應列於作者姓名下方
4. 「摘要」二字
5. 論文摘要：論文應附中、英文摘要（五百字以內）及關鍵詞（5 個以內）。以英文之外的其他外文書寫之論文，請一併附上中文、該外文、英文共 3 頁摘要（五百字以內）及關鍵詞（5 個以內）。
6. 所屬單位與職稱：請在作者姓名之後插入註腳*書寫，包括作者姓名、職稱、所屬學校、系所或研究單位。作者如不只一位，則以**、***…等符號類推，以便識別。
7. 誌謝：誌謝詞應於中英外文摘要頁的「摘要」二字後方插入雙米

8. 號**註腳，誌謝詞宜力求簡短扼要。

(六) 來稿的裝訂順序為中文、英文、其他外文摘要（及關鍵詞彙）、正文（及參考文獻或註釋）、末頁資料及圖表。圖表編號必須與文中之編號一致。

二、標點符號

論文之中文部分請用全形之新式標點符號，英文部分請使用半形新式標點符號。（引號）用於平常引號；『』（雙引號）用於第二級引號（即引號內之引號）；《》（書名號）用於專書、期刊等標題，如《外國語文研究》；〈〉（篇名號）用於論文及篇名。

三、子目

篇內各節，如子目繁多，請參照以下舉例將各級子目次序標明。

➤ 標題階層（中文）

第一層： 壹 貳 叁 肆 伍 陸 柒

第二層： 一 二 三 四 五 六 七

第三層： (一) (二) (三) (四) (五) (六) (七)

第四層： (1) (2) (3) (4) (5) (6) (7)

➤ 標題階層（英文、外語）

第一層： 1. 2. 3. 4. 5. 6. 7.

第二層： 1.1. 2.1. 3.1. 4.1. 5.1. 6.1. 7.1.

第三層： 1.1.1. 2.1.1. 3.1.1. 4.1.1. 5.1.1. 6.1.1. 7.1.1.

第四層： 1.1.1.1. 2.1.1.1. 3.1.1.1. 4.1.1.1. 5.1.1.1. 6.1.1.1. 7.1.1.1.

第五層 1.1.... 2.1.... 3.1.... 4.1.... 5.1.... 6.1.... 7.1.....

四、分段與引文

(一) 直引原文時，短文可逕入正文，外加引號。

(二) 如所引原文較長，可另行抄錄，並左右各縮排兩字元。

五、註釋

(一) 註釋置於每頁下方，中文註釋以微軟正黑體 8 級字，外文註釋以 Cambria Math 8 級字橫式書寫，每註另起一行，以細黑線與正文分開，其編號以每篇論文為單位，順次排列。

(二) 註釋號碼，請用阿拉伯數字，如 1、2、3，字體為 Cambria Math，10 級字，並將數字以上標方式至於左上角。

(三) 如為正文內之文字，請以上標方式置於正文右上角，字體為 Cambria Math，9 級字，並將數字以上標方式至於右上角。如：新思潮派¹，是以東京大學的學生為中心的同人雜誌「新思潮」²為據點，在文壇上活躍的新銳作家集團。³

(四) 引用文獻格式（依 MLA 8th 《MLA 論文寫作手冊 第八版》），方式如下：

- 在正文中直接列出作者及頁數，如：(劉崇稜 133-34) 或：楊永良在文中提及……(18-21)。
- 凡該引用作者超出兩筆文獻，需於頁數前加上該篇文獻之篇名「簡稱」，如：

正文：

Hypertext, as one theorist puts it, is “all about connection, linkage, and affiliation” (Moulthrop, “You Say,” par.19).....

文獻：

---. “You Say You Want a Revolution? Hypertext and the Laws of Media.” Postmodern Culture 1.3 (1991): 53 pars. 12 July 2002 <http://mus.e.jhu.edu/journals/pos/tmodern_culture/v001/1.3moulthrop.html>.

- 請避免以文獻之「出版年」代替文獻篇名之「簡稱」。詳細說明請見《MLA 論文寫作手冊 第八版》。
- 註釋內引用文獻的型式與正文同，惟須在全篇論文之後的參考文獻

中，詳細列出完整出版資料。其他各外國語文參考文獻之寫法，見格式要求「九、參考文獻」中所列型式。

六、製圖與圖片（詳細說明請參照《MLA 論文寫作手冊 第八版》）

- (一) 圖片面積不可過大，能清楚辨識內容即可。
- (二) 圖片須附有編號、標題或簡短說明，皆置於圖形之下。

例：



Figura. 2. El fauno en la película, *El dia de la bestia*, <https://es.images.search.yahoo.com/search/images>

- (三) 字體不宜過大，應配合圖形之尺寸，以能清楚辨識為限。
- (四) 放大的圖形應說明放大比例，並請注意縮小製版後線條是否清楚，字體是否足以辨識。

七、製表（詳細說明請參照《MLA 論文寫作手冊 第八版》）

- (一) 表之製作，須在表格比文句更能表達文義時方為之。
- (二) 表格須配合正文加以編號，並書明表之標題。若有進一步的解釋，則可另作註解。標題應置於表之上方，註解應置於表之下方。

例：

表 4：歐洲前十大感染人數國家統計表

序號	國家	感染人數	死亡率
1.	俄羅斯聯邦	1,209,039	14.6
2.	西班牙	789,932	68.7
3.	法國	606,625	49.5
4.	英國	480,017	63.0
5.	土耳其	323,014	10.2
6.	義大利	322,751	59.3
7.	德國	300,285	11.5
8.	烏克蘭	232,424	10.2
9.	羅馬尼亞	134,065	25.4
10.	荷蘭	132,013	37.8

*資料來源：BBC 新聞 2020 年 10 月 4 日

(三) 表格文字使用簡稱時，若簡稱尚未約定俗成，或未曾在正文中出現，則須註記全稱。

八、參考文獻

不以註釋方式引用文獻書目之完整出版資料者，須在全篇論文之後列出全部參考（引用）文獻之完整資料，依中文、英文、其他外文排列。請以凸排 1.27 公分設定各項參考文獻來源，如下圖所示

(一) 專書：

(中文) 林壽華。《外語教學概論》。台北：書林，1998。

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Jacob, Alan. *The Pleasures of Reading in an Age of Distraction*. Oxford UP, 2001.

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Mendoza, Eduardo. *La verdad sobre el caso Savolta*. Barcelona, Seix Barral, 1975.

(德文)

Willms, Eva (Hg.). *Der Marner. Lieder und Sangsprüche aus dem 13. Jahrhundert und ihr Weiterleben im Meistersang*. Berlin/New York, de Gruyter, 2008.

(俄文)

Ильич, Карасик Владимир. *Языковые Ключи*. Гнозис, 2009.

(阿拉伯文)

Sakkut, Hamdi. *Al-Riwāyah al-cArabīyah: Bibliyūjrāfīyā wa-Madkhal Naqdī (1865-1995)*. Al-Qāhirah, Qism al-Nashr bi-al-Jāmicah al-Amrīkīyah bi-al-Qāhirah, 2000.

رونکییر، بارکلی، *عبر الأرضي الوهابية على ظهر جمل*، ترجمة : منصور محمد الخريجي، ط 2، الرياض: مكتبة العبيكان ، 1424هـ (2003).

(日文)

影山太郎。『動詞意味論—言語と認知の接点一』，東京・くろしお出版，1996年。

(土耳其文)

Moran, Berna. *Edebiyat Kuramları ve Eleştiri*. 26. baskı. İstanbul, İletişim Yayıncıları, 2016.

(韓文)

홍길동。『韓國古典文學研究』，서울・昭明出版，2015年。

(二) 期刊：

(中文)

張月珍。〈英語帝國的解構與再建議：網際網路全球化時代的語言文化政治〉。《文山評論》，國立政治大學，2003年1月，頁105-26。

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Koopmann, Anne, et al. "Did the General Population in Germany Drink More Alcohol during the COVID-19 Pandemic Lockdown?" *Alcohol and Alcoholism*, vol. 55, no. 6, 2020, pp. 689-99.

(法文)

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中文摘要內文

（12p）.....

.....

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.....。

（空二行）

關鍵詞：第一個、第二個、第三個、第四個、第五個

*作者所屬單位與職稱（微軟正黑體中文）（8p）

**誌謝詞（微軟正黑體中文）（8p）

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