# A cross-disciplinary study of value arguments in doctoral theses submitted to universities in Hong Kong

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A B S T R A C T

The doctoral thesis is a key academic genre that documents doctoral students' socialisation into their disciplinary knowledge-making practices and their contributions to disciplinary knowledge. However, little attention has been paid to how doctoral students promote the value of their research in their theses. Using Carter's value arguments (VAs) framework, this study explored how doctoral students construct VAs strategically to underscore and promote the significance of their research. Analyses of 90 doctoral theses in the disciplines of applied linguistics, psychology, and physics, submitted to UGC-funded Hong Kong universities, revealed disciplinary differences in the formal and functional classes of VAs. Formally, applied linguistics theses employed explicit VAs significantly more frequently than those of psychology and physics did. Functionally, significant disciplinary differences were found in the use of VAs to narrow the focus of a study, intensify the importance of research gaps, justify the importance of gaps in literature, demonstrate the overall value of the research, and demonstrate the value of research findings. These findings highlight disciplinary influences on VAs as a promotional strategy for doctoral students to persuade readers of their research's value and merits. Based on these findings, implications are derived for English-for-academic-purposes pedagogy, doctoral supervision, and further research on promotion.

## 1. Introduction

One important genre of academic writing in higher education is the doctoral thesis, which is a "rite of passage to an academic career" (Bunton, 2002, p.57). The thesis' communicative purpose "is to demonstrate to its examiners that the writer/researcher has made an original contribution to knowledge in the chosen field" (Bunton, 2002, p.73). Within the thesis, the *Significance of the Study* (SoS) section is crucial to demonstrating the study's contribution to knowledge, practice, and policy. It is where the thesis author promotes the value of their research and highlights its potential impact on the academic community and beyond. As Weissberg and Buker (1990) noted, the section usually occurs as one of the five components in the introduction of theses in many disciplines. Defined as the "value or justification for carrying out the study" (Weissberg & Buker, 1990, p. 22), the significance of the study is typically discussed after the thesis author has provided the background and purpose of their study. Although doctoral theses in all disciplines are expected to make clear the significance of the research conducted, it is important to also note that they may not have a designated SoS section and that the SoS section does not have a fixed position, either.

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Generally, doctoral students face several challenges in presenting the significance of their work (Lim, 2008). Crafting a persuasive discussion on the significance of a study is a complex rhetorical task that requires researchers to balance the substantive framing of their work with persuasive arguments and promotional elements. Just like other generic sections, the SoS section is not a mere signpost but also engages readers actively to achieve its rhetorical and communicative functions (Shehzad & Abbas, 2016). Despite the importance of the SoS section, little attention has been paid to how value, namely the perceived relevance, importance or impact of a study, is constructed in this section. Understanding how value can be constructed effectively and in a disciplinarily appropriate manner can help doctoral students communicate and promote their thesis research more persuasively. To this end, we draw on Carter's (2016, 2021) conceptualisation of value arguments (VAs) to examine how doctoral students in three disciplines rhetorically construct and demonstrate the importance, contribution, and potential impact of their research in the SoS section of their doctoral theses.

## 2. Literature review

### 2.1. Promotion in academic discourse

In academic discourse, promotional strategies are linguistic and rhetorical devices used to positively influence readers' perceptions of research contributions (Martín & Pérez, 2014). Most studies on promotional strategies have adopted a cross-linguistic perspective, comparing the deployment of such strategies in research articles (RAs) between different languages such as English and Spanish (Moreno, 2021; Mur-Dueñas, 2018) or English and Chinese (Deng, Cheng, & Gao, 2024). For example, Mur-Dueñas (2018) examined statements of contributions as a promotional strategy in RAs in business management, finding that fewer Spanish RAs (16.7 %) promoted their contributions than English RAs (50 %) did. Her qualitative analysis identified lexical and discursive indicators of promotion such as *comprehensive*, *impact*, *advance*, *insights*, and *whereas*. Similar to Mur-Dueñas's (2018) findings, Moreno (2021) reported that English RAs authored by social scientists were more promotional than Spanish RAs in their discussions by highlighting positive aspects of their studies. More recently, Deng et al.'s (2024) cross-linguistic study on promotional strategies in applied linguistics revealed that English texts were more promotional than Chinese ones. There were also cross-linguistic differences in the specific strategies used.

The extant studies, however, paid little attention to promotional strategies in doctoral theses. Furthermore, the focus has been on elements such as statements of contribution (Mur-Dueñas, 2018) and positive evaluation (Moreno, 2021). While these elements do serve promotional purposes, they have been examined largely in a discrete manner, without being integrated into larger discoursal units to show how they function textually and in a conceptually coherent manner. By contrast, VAs constitute larger rhetorical and textual structures that conceptually integrate multiple and different kinds of individual promotional strategies. Thus, our study addresses the aforementioned gaps in and limitations of extant research on promotional strategies by (a) adopting VAs as the conceptual framework, (b) extending the analysis of promotional strategies to doctoral theses as a key yet understudied academic genre, (c) adopting a cross-disciplinary perspective to reveal how theses in different disciplines differ in their use of promotional strategies.

### 2.2. Cross-disciplinary differences in promotion

Although academic disciplines have different epistemologies and discoursal practices (Becher, 1994; Becher & Trowler, 2001), only a limited number of studies have explored promotional strategies from a cross-disciplinary perspective. Informed by the principle of dynamism, Berkenkotter and Huckin (1995) identified several promotional features in the RAs of hard sciences, such as newsworthy titles, arguments for novelty, and prominent positioning of claims/findings. They concluded that "today's scientists seem to be promoting their work to a degree never seen before" (p.43), due to the prevalence of a "consumer culture" in hard disciplines, where the novelty of scientific work is "at the heart of the scientific enterprise" (p.47). Focusing on the overarching discipline of business studies, Lindeberg (2004) investigated promotion in RAs and found interesting sub-disciplinary differences among marketing, finance, and management. Generally, finance RAs used fewer promotional strategies (e.g., highlighting the significance of the chosen research topic, shortcomings of previous studies or contributions of the present study), compared to marketing and management RAs. Drawing on Swales' (1990) model of rhetorical moves in the introductions of RAs, Martín and Pérez, 2009 showed that psychology RAs used promotional strategies more frequently than medicine RAs to create a research space and justify the value of the research. In another study, Martín and Pérez (2014) found that health sciences RAs in both English and Spanish were more promotional than humanities/social sciences RAs written in the two languages. Thus, disciplinary practices prevailed over national or cultural conventions, demonstrating disciplinary influences on the use of promotional strategies. These findings underscore the need to study promotion in academic discourse from a cross-disciplinary perspective, as the present study attempts to do.

Cross-disciplinary studies have also examined promotional strategies from a metadiscoursal perspective. For instance, Hyland (2001) investigated self-citations and self-mentions as promotional strategies for highlighting the contributions of one's research. He observed that these strategies were more prevalent in soft disciplines than hard ones, where researchers tend to downplay their role and highlight the phenomena under study. Focusing on promotional metadiscourse in RAs in the two disciplines of language and literary studies, Afros and Schryer (2009) found cross-disciplinary differences in the realisation of promotional strategies through lexicogrammatical resources such as negative and positive polarities heightened by affixes, comment clauses, inherently evaluative lexis, and personal pronouns. Cross-disciplinary differences were also

reported by Hyland and Jiang (2018), who found that RAs in hard disciplines (i.e., electrical engineering and biology) employed almost twice as many self-promotions as those of soft disciplines (i.e., applied linguistics and sociology) did. Similarly, Cao & Hu, 2014 noted that applied linguists and educational researchers used more boosters to promote their research than psychologists did. These studies have revealed different disciplinary knowledge structures and research practices that influence how research is promoted.

In contrast to the predominant focus of extant cross-disciplinary research on RAs, we turn our attention to doctoral theses, which offer a rich source of data for understanding how burgeoning academics construct value as a form of promotion. Unlike previous studies, which have mostly explored evaluative language and metadiscourse as promotional strategies, our study examines the use of VAs for promotional purposes. While evaluative language and metadiscourse are mostly comprised of single words or phrases, VAs integrate such individual lexico-grammatical resources into larger rhetorical units that combine claims about research importance with supporting reasons. Thus, VAs allow us to examine not only how authors communicate importance through individual linguistic devices but also how these devices function textually in arguments that establish, justify, and promote their research. This approach distinguishes our study from previous work on metadiscourse or evaluative language as promotional strategies. In this way, our study is aimed at enhancing the understanding of discipline-specific promotional practices and informing academic writing pedagogy tailored to disciplinary practices.

### 2.3. Value arguments as promotional strategies

VAs are rhetorical constructions that consist of "a claim [about something important to study], a ground or reason supporting the claim, and a warrant, typically unstated, on which the claim and reason are based" (Carter, 2016, p.307). VAs are persuasive and promotional in that researchers use them to convince readers of the value of their research (Carter, 2016, 2021). Carter (2016, 2021) classifies VAs into formal (structural types) and functional (rhetorical purposes) categories. Formally, VAs fall into three categories, depending on the explicitness of the claim made and the reason(s) provided: explicit (i.e., explicit value claims + explicit value reasons), semi-explicit (i.e., explicit value claims + implied value reasons), and implicit (i.e., implied value claims + implied value reasons). Functionally, VAs can establish the value context, add value reasons, narrow the research focus, intensify the importance of an identified research gap, justify the importance of a gap in the literature, demonstrate the value of the present research, and demonstrate the value of research findings (see section 3.2 for detail).

Drawing on the formal and functional classifications presented above, Carter's (2016) seminal study examined VAs in the introductions of 60 science RAs and illuminated how value was rhetorically constructed in these RAs. Extending his 2016 study, Carter (2021) conducted a quantitative analysis of the VAs in the same corpus, identifying 115 implicit VAs, 41 semi-explicit VAs, and 18 explicit VAs. Of these VAs, 43 (24.7 %) were used to establish value contexts, 32 (18.4 %) intensified or justified the importance of identified research gaps, 22 (12.6 %) demonstrated the value of present research or findings, and 15 (8.6 %) added value reasons or narrowed the research focus. Carter found both widespread use of VAs and cross-disciplinary differences in their use, suggesting that VAs are rhetorically critical in research genres and "offer the possibility … to better understand how researchers and scholars across disciplines and research genres characterise the importance of their work" (2021, p.337). Azizi, Abdi, and Gholami (2022) examined VAs as promotional strategies in the introductions of 30 applied linguistics RA and found 302 VAs, most of which ($n = 271$) were implicit VAs. Justifying the importance of a research gap ($n = 78$), establishing a value context ($n = 55$), and demonstrating the value of the present research ($n = 53$) were the most common functions of these VAs. Given the importance of VAs, Azizi et al. called for further research to "analyze and compare their use in different genres and disciplines" (p.11).

Several gaps exist in previous research on VAs. First, the extant studies on VAs (Azizi et al., 2022; Carter, 2016, 2021) are limited to RAs. In response to Azizi et al.'s (2022) call, we expand the explorations of VAs to doctoral theses, a high-stakes genre for burgeoning academics. Second, only one previous study (Carter, 2021) attended to cross-disciplinary differences in the use of VAs. As academic writing conventions and rhetorical strategies are widely acknowledged to vary across disciplines, we set out to address this gap by examining VAs across three disciplines. Finally, extant studies on VAs relied on only descriptive statistics to determine differences. To come up with more robust results, our study employs inferential statistics (i.e., ANOVAs) to gauge cross-disciplinary differences. Specifically, the study is guided by the following questions:

1. Do doctoral theses differ in their use of the formal classes of VAs across disciplines and, if they do, what are the specific cross-disciplinary differences?
2. Do doctoral theses differ in their use of the functional classes of VAs across disciplines and, if they do, what are the specific cross-disciplinary differences?

## 3. Method

### 3.1. Corpus construction

We constructed a corpus of doctoral theses submitted to the eight Hong Kong universities funded by the University Grants Committee (UGC): The University of Hong Kong, The Chinese University of Hong Kong, The Hong Kong University of Science and Technology, The Hong Kong Polytechnic University, The City University of Hong Kong, Hong Kong Baptist University,

Lingnan University, and The Education University of Hong Kong. The UGC-funded universities are top institutions of higher education in Hong Kong, enjoy international recognition, promote quality research and teaching, and adhere to high global academic standards (Benito, Gil, & Romera, 2020). English is the sole medium of instruction in six of the UGC-funded universities and a co-medium of instruction with Cantonese in the two remaining ones (Shepard & Rose, 2023). In general, both local and international postgraduate students studying in the universities are proficient in English. Doctoral theses are predominantly written in English, and only a small number in specific disciplines/programs (e.g., Chinese studies or histories) are written in another language. Doctoral theses submitted to the universities are open-access.

We adopted a two-stage sampling procedure for the data collection. In the first stage, we used purposive sampling to identify the target disciplines and the thesis completion period to cover. We chose applied linguistics (APL), psychology (PSY) and physics (PHY) to represent the humanities, social sciences and science, respectively, and to reflect a representative range of epistemological orientations and research practices along the soft-hard continuum (Hu & Cao, 2015; Hu, 2018; Hyland, 2001). The same disciplines were sampled as representatives of the three broad disciplinary groupings in previous studies (e.g., Hyland & Jiang, 2018; Wang & Hu, 2024). Given the anticipated amount of detailed analytical work, we were unable to include more disciplines. We decided that the sampled theses had to be completed within 10 years (2015–2024) to capture current promotional practices. The 10-year timeframe was to ensure a sufficiently large population of theses for random sampling and maintain temporal consistency across the disciplines (due to the small annual number of theses in APL and PSY). In the second sampling stage, we downloaded all the eligible theses from the universities and combined them into three folders, one for each sampled discipline. The theses in each folder were serially numbered, and an online program (i.e., Research Randomiser) was used to generate random numbers to select 30 theses randomly from each discipline because random sampling is generally regarded as the best way to arrive at a representative sample (Teddlie & Yu, 2007). Table 1 presents the eligible theses and the sample selected for this study.

**Table 1**
Profile of Theses by Discipline.

| Discipline | Eligible thesis | Sampled thesis | No. of Words | Mean (words) |
| --- | --- | --- | --- | --- |
| APL | 125 | 30 | 130,479 | 4,349 |
| PSY | 146 | 30 | 108,539 | 3,618 |
| PHY | 233 | 30 | 98,581 | 3,286 |
| Total | 504 | 90 | 337,599 | 3,751 |

*Note.* The numbers of words and the mean numbers of words were computed based on only the introductory chapters of the sampled theses.

The SoS sections were extracted from the sampled theses into three Word files (one per discipline). Unlike the APL theses, most of the PSY and PHY theses lacked an explicit SoS section. Instead, the relevant content was either found in sections titled "contribution", "rationale of the study" and "this thesis" or embedded in the introduction of the theses without a separate heading (see Table 2 for the frequencies of these sections). This reveals the lack of a universal convention for the SoS section (Shehzad & Abbas, 2016). Furthermore, the position of the SoS section was not fixed as it came before or after the research questions and objectives. To address these issues, we relied on Carter's (2021) conceptualisation of VAs and our understanding of generic moves (Swales, 1990) to identify and extract VAs from the introductory chapters of the theses.

**Table 2**
Headings for Significance of the Study.

| Discipline | SoS | R/M | Contribution | This thesis | None |
| --- | --- | --- | --- | --- | --- |
| APL | 20 (66.67 %) | 5 (16.67 %) | 0 (0 %) | 0 (0 %) | 5 (16.67 %) |
| PSY | 4 (13.33 %) | 2 (6.67 %) | 0 (0 %) | 5 (16.67 %) | 19 (63.33 %) |
| PHY | 1 (3.33 %) | 1 (3.33 %) | 1 (3.33 %) | 0 (0 %) | 27 (90 %) |

*Note*: SoS = "significance of the study"; R/M = "rationale of the study"/"motivations for the study"; this thesis = "this thesis"/"the present study/research"; none = no explicit (sub)heading.

### 3.2. Analytical framework

We adopted Carter's (2016, 2021) framework for identifying and analysing VAs. In this framework, a VA consists of three main components: (a) the claim, which asserts the significance or importance of the research; (b) the reason or evidence supporting the claim; and (c) the warrant or justification that links the reason to the claim (Carter, 2016, 2021). VAs fall into three formal classes and seven functional classes, as summarised in Table 3 and explained below.

**Table 3**
Carter's Framework of Value Arguments.

| Formal class | Functional class |
|---|---|
| 1. Explicit | 1. Establishing the value context |
| 2. Semi-explicit | 2. Adding value reasons |
| 3. Implicit | 3. Narrowing the research focus |
| | 4. Intensifying the importance of research gaps |
| | 5. Justifying the importance of gaps in literature |
| | 6. Demonstrating the value of the present research |
| | 7. Demonstrating the value of research findings |

An explicit VA has an explicit claim overtly stating the value of the research and an explicit reason providing the rationale for the research (Example 1). The value claim is explicitly marked by words such as *significant, important, relevant, novel, essential*, and *crucial*, and the value reason is signposted by reason markers such as *because, due to, since*, and *as*. A semi-explicit VA combines an explicit value claim and an implied reason without reason markers (Example 2). An implicit VA consists of an implied claim and an implied reason, relying on value-laden and evaluative lexis to indicate importance without explicitly stating it (Example 3).

**Example 1**:
"The research proposed here is **significant** *because* it represents a new approach to the study of second language learning in China." (APL7)[1]

Claim: The research proposed here is *significant* [to study]

Reason: *because* it represents a new approach to the study of second language learning in China.

**Example 2**:
"The conductance (transmission) is **important** to characterize the performance of mesoscopic devices." (PHY28)

Claim: The conductance (transmission) is *important* [to study]

Reason: [because it] characterizes the performance of mesoscopic devices.

**Example 3**:
"Understanding both word form and meaning is **required** for **successful** decoding in Chinese." (PSY30)

Claim: Understanding both word form and meaning is [important to study]

Reason: [because it is] required for successful decoding in Chinese.

VAs can achieve seven functions. The first function, establishing the value context, provides a "broad value within which the research derives its importance" (Carter, 2021, p.318). It creates a broader framework that demonstrates why the specific research being presented matters in a larger context through topic generalisation, as illustrated in Example 4. The second function, adding value reasons, takes the form of "arguments whose subjects are the same as or pronominative for immediately preceding value arguments and whose predicate phrases provide further reasons in support of the value claim in the first argument" (Carter, 2021, p.318). The second sentence in Example 5 illustrates this function.

**Example 4**:
"IS (information structure) is a **central** area of research in pragmatics." (APL2)

Claim: IS is [important to study]

Reason: [because it is] a central area of research in pragmatics.

**Example 5**:
"**Catalysis** is *extremely* **important** in industrial production. **It** plays an **important** role in efforts to improve energy efficiency." (PHY30)

Claim 1: Catalysis is extremely *important* [to study]

Reason: [because it is] important in industrial production.

Claim 2: It (catalysis) is [important to study]

Reason: [because it] plays an important role in efforts to improve energy efficiency.

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[1] The examples are coded based on their sources: for example, APL7 refers to thesis 7 in applied linguistics; PSY1 means thesis 1 in psychology; and PHY28 denotes thesis 28 in physics.

Narrowing the research focus is a third function of VAs that involves two consecutive arguments, with the second one focusing on a more specific research niche than the first one does and typically introduced by expressions such as *specifically* or *in particular* (see Example 6). The fourth function, intensifying the importance of an identified research gap, is achieved by VAs that directly precede a statement of a research lacuna (usually marked by expressions such as *few*, *little attention*, *however*, and *despite*) to make a stronger case for the importance of addressing it, as exemplified by Example 7.

**Example 6**:
"Treatment strategies for insomnia have been widely studied among the adult population. **In particular**, Cognitive Behavioral Therapy for Insomnia (CBT-I) has been recommended as the first-line treatment option for adult insomnia." (PSY22)

Claim 1: Treatment strategies for insomnia [are important to study]

Reason: [because they] have been widely studied among the adult population.

Claim 2: Cognitive Behavioral Therapy for Insomnia (CBT-I) is [important to study]

Reason: [because it] has been recommended as the first-line treatment option for adult insomnia.

**Example 7**:
"Familiarization with a face has been shown to reduce the number of fixations and shift the focus to the eye region. *However*, it is currently unknown if familiarization with a person can lead to an identity-specific scanpath for that person." (PSY29)

Claim: Familiarization with a face [is important]

Reason: [because it] reduces the number of fixations and shifts the focus to the eye region.

Justifying the importance of a gap in the literature, as the fifth function, employs VAs that follow the identification of a research gap (typically marked by expressions such as *however*, *despite*, and *little is known*) and make the case that it is important to fill in the gap (see Example 8). A sixth function is demonstrating the value of the present research. As illustrated by Example 9, this involves the use of VAs that state the relevance or importance of doing the study itself. Finally, demonstrating the value of research findings makes the case for the importance of the study's results, pointing out its deliverables, principal findings or outcomes (see Example 10).

**Example 8**:
"How individual differences in affective traits are represented in the brain, especially in the three networks highlighted in the triple network model, *is unclear*. **This knowledge** is **essential** for us to understand the normal affective neural organization, and provides fundamentals for us to learn how the affective psychopathology occurs." (PSY28)

Claim: This knowledge is *essential*

Reason: [because it helps] us to understand the normal affective neural organization, and provides fundamentals for us to learn how the affective psychopathology occurs.

**Example 9**:
"**The study** is **significant** *in that* it investigates ideational metafunctions of English and Korean in contrast." (APL18)

Claim: The study is *significant*

Reason: *in that* it represents a new approach to the study of second language learning in China.

**Example 10**:
"**The findings of this study** will shed more light on the extent to which self-regulation strategies boost or buffer the impact of goal orientation on quality job search behaviour." (PSY9)

Claim: The findings of this study [are important]

Reason: [because they] will shed more light on the extent to which self-regulation strategies boost or buffer the impact of goal orientation on quality job search behaviour.

### 3.3. Data analysis

Following the coding scheme in Appendix A that was based on the analytical framework presented above, all the extracted VAs were coded twice: first for formal categories and then for functional categories. The formal categories were colour-coded: red for explicit VAs, blue for semi-explicit VAs and yellow for implicit VAs. Claims were bolded, and reasons were italicised. The second author coded the form and functions of the VAs iteratively to ensure the accuracy of the coding. To establish coding reliability, an expert in discourse analysis was provided with, and trained to use, the coding scheme, which clearly defined the concept of VAs and explained their forms and functions with examples. After a practice session, the coder and the second author

independently coded the VAs of 15 randomly selected doctoral theses (five from each discipline). The inter-coder reliability was excellent (Fleiss, 1981): κ = 0.78 for the formal classes and κ = 0.79 for the functional classes. The disagreements[2] were resolved through discussion. Since there was acceptable coding reliability, the second author coded the remaining VAs in the dataset.

To answer our research questions, we conducted a series of one-way between-subjects ANOVAs for each of the formal and functional classes via SPSS (version 25). Before the ANOVAs were run, we checked for normality using Shapiro–Wilk tests and Q–Q plots. Additionally, we assessed the homogeneity of variance using Levene's tests. All assumptions of normality were met. In the ANOVAs, discipline was the independent variable, and the frequency of VAs in a particular formal/functional class was the dependent variable. Tukey's Test, a common post hoc procedure for comparing all possible pairs, was conducted to locate differences between the disciplines, where an ANOVA found a significant main effect. The alpha was set at 0.05 (2-tailed) for all the statistical tests.

## 4. Results

### 4.1. Disciplinary variation in formal classes of value arguments

A total of 895 VAs were found in the theses: APL = 333, PSY = 314, and PHY = 248. Table 4 summarises the descriptive statistics by formal class and discipline.

**Table 4**
Descriptive Statistics for Formal VAs.

| Formal Class | N | APL | | PSY | | PHY | |
|---|---|---|---|---|---|---|---|
| | | M | SD | M | SD | M | SD |
| Explicit | 46 | 0.93 | 1.39 | 0.33 | 0.71 | 0.27 | 0.64 |
| Semi-explicit | 67 | 0.70 | 1.22 | 0.77 | 1.55 | 0.77 | 1.31 |
| Implicit | 782 | 9.47 | 5.33 | 9.37 | 6.13 | 7.23 | 4.67 |

#### 4.1.1. Explicit value arguments

The ANOVA run on explicit VAs revealed a statistically significant main effect of discipline, $F(2,87) = 4.376$, $p = .015$, $\eta^2 = 0.091$. Discipline explained 9.1 % of the variance in the frequencies of explicit VAs, which registered a medium effect (Cohen, 1988). Post hoc Tukey's Test showed that APL theses ($M = 0.93$, $SD = 1.39$) used markedly more explicit VAs than PSY ($M = 0.33$, $SD = 0.71$, $p = 0.46$) and PHY theses ($M = 0.27$, $SD = 0.64$, $p = 0.023$) did.

Textual analysis revealed that claims were signalled by *important* or its promotional synonyms such as *significant*, *essential*, *crucial*, *useful*, and *critical*, whereas reasons were introduced by *because* or synonymous expressions such as *due to*, *as*, and *since* (Examples 11–13).

**Example 11**:
"The understanding of the engagement process is **crucial** *because* it enables us to have a clear picture of what problems students encounter and how they make decisions to solve the problems in the process, which can inform pedagogical interventions." (APL27)

**Example 12**:
"This [information on job search] is particularly **important** *because* job seekers may have different goals and the application of specific strategies may elicit different search outcomes." (PSY9)

**Example 13**:
"The concept of free volume is very **important**, *as* it is a possible microscopic elementary excitation dominating dynamics in structural glasses." (PHY12)

We noted that all disciplines modified the explicit claims, using adverbs such as *very* and *particularly*, as demonstrated in Examples 12 and 13, and intensifiers such as *indeed*, to emphasise the importance of research. Nonetheless, APL theses were inclined to use adverbs such as *practically* to stress practical importance. Qualitative analyses also showed differences in the evaluative lexis used across the disciplines, with APL theses deploying a greater variety of words such as *valuable*, *crucial* (Example 11), *essential*, and *interesting*. A smaller variety was found in PSY and PHY theses. Another important observation was that, while APL and PSY theses adopted the basic structure of the claim followed by the reason as a dependent clause, PHY theses typically began the structure with the reason clause usually marked by *due to* or *given that*.

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[2] Disagreements concerned Functions 4 and 5. In Function 4, the VA is placed before the gap statement to highlight what is known, making the gap appear more significant by contrast. In Function 5, the VA is placed after the gap and argues why that specific gap is important to address. Thus, the following example is an instance of Function 5: "Meanwhile, psychological intervention such as CBT-I has not been well-studied as one of the treatment options in youths with insomnia (11). Thus, this further reaffirmed the low accessibility and availability of CBT-I and underscored the need to investigate its feasibility and efficacy in the youth population" (PSY22). The two raters occasionally disagreed between Functions 4 and 5, identified the causes of the discrepancies, and decided to use the placement of the VAs in relation to the gap statements consistently to distinguish the two functions.

### 4.1.2. Semi-explicit value arguments

The ANOVA run on semi-explicit VAs failed to find a significant main effect of discipline, $F(2,87) = 0.024$, $p = 0.976$, $\eta^2 = 0.001$. The independent variable explained only 1 % of the variance in the dependent variable. This means that semi-explicit VAs occurred with similar frequencies in APL ($M = 0.70$, $SD = 1.21$), PSY ($M = 0.77$, $SD = 1.55$), and PHY theses ($M = 0.77$, $SD = 1.31$).

A semi-explicit VA has an explicit claim and an implicit reason. Apart from Example 16, which used *important* to make a claim, Examples 14 and 15 as semi-explicit VAs used synonyms of *important* to make claims, whereas reasons were implied by various constructions (e.g., prepositional phrases, clauses and infinitives). Instead of the *be* + complement structure, some semi-explicit VAs employed nominal phrases such as *useful insights*, *an important alternative*, and *significant contribution*. APL theses preferred evaluative lexis that implied utility and practicality (Example 14), whereas PSY and PHY theses stressed general significance and necessity, as illustrated in Examples 15 and 16. Also, compared to APL and PSY, PHY theses closely integrated the value reason into the claim by complementing prepositions with gerund participials (Example 16). Despite these differences, theses in all the disciplines provided a clear context for the importance of the topic concerned.

> **Example 14**:
> "This study is practically **valuable** to public health authorities and health officials for credible communication to mitigate the impact in subsequent disease outbreaks." (APL15)
>
> Claim: This study is practically *valuable*
>
> Reason: [because it offers insights into] credible communication to mitigate the impact in subsequent disease outbreaks.
>
> **Example 15**:
> "To conclude, traffic safety is **essential** for countries irrespective of their economic development, yet the catastrophic impacts are far more significant for less developed countries." (PSY14)
>
> Claim: To conclude, traffic safety is *essential*
>
> Reason: [because] the catastrophic impacts are far more significant for less developed countries.
>
> **Example 16**:
> "Graphs are **important** in studying problems of complex networks." (PHY14)
>
> Claim: Graphs are *important* [to study]
>
> Reason: [because they help] in studying problems of complex networks.

### 4.1.3. Implicit value arguments

The ANOVA run on implicit VAs found no significant main effect of discipline, $F(2,87) = 1.632$, $p = 0.202$, $\eta^2 = 0.036$. Discipline explained 3.6 % of the variance in the dependent variable. This means that implicit VAs occurred with similar frequencies in APL ($M = 9.47$, $SD = 5.33$), PSY ($M = 9.37$, $SD = 6.13$), and PHY ($M = 7.23$, $SD = 4.67$).

Implicit VAs identified in our corpus drew on lexis that ascribed a strong positive or negative value to the target of evaluation. Consider Examples 17 to 19:

> **Example 17**:
> "All these show that **ethics** is *indispensable* to translation and TS [translation studies]." (APL25)
>
> Claim: Ethics is [important to study]
>
> Reason: [because it] is indispensable to translation and TS.
>
> **Example 18**:
> "With its *prevalence* on the rise on recent decades, **ASD** [autism spectrum disorder] is *increasingly* being *recognised* as a *growing* public health concern." (PSY6)
>
> Claim: ASD is [important to study]
>
> Reason: [because it] is prevalent and increasingly being recognised as a growing public health concern.
>
> **Example 19**:
> "**Chemical bonding and physical absorption** are *intrinsic driving forces* for the formation of structure exhibiting *long-range* order." (PHY4)
>
> Claim: Chemical bonding and physical absorption are [important to study]
>
> Reason: [because they] are intrinsic driving forces for the formation of structure exhibiting long-range order.

The above examples use positive value-laden words that imply value reasons. In Example 17, the implicit VA is constructed in the *that*-clause, where the clause subject *ethics* becomes an implicit claim because of the value-laden adjective *indispensable* in the predicate complement, which implies a value reason. Similarly, *ASD* is an implicit claim and *increasingly*,

*prevalence* [prevalent], and *growing* are value-laden words that communicate the importance of studying ASD (Example 18). In Example 19, the inherently positive expressions (i.e., *intrinsic driving forces* and *long-range*) provide implied value reasons for studying chemical bonding and physical absorption. The disciplines preferred to use positive value-laden words to emphasise the scope of importance: within a specific field (APL theses), broad social relevance (PSY theses), and fundamental principles and processes (PHY theses).

### 4.2. Disciplinary variation in functional classes of value arguments

Table 5 presents descriptive statistics for the functional classes. The results of the ANOVAs and post hoc analyses are reported below.

**Table 5**
Descriptive Statistics for Functional VAs by Discipline.

| Functional Class | APL | | PSY | | PHY | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| 1. Establishing the value context | 1.87 | 1.53 | 2.00 | 1.49 | 2.10 | 1.52 |
| 2. Adding value reasons | 1.27 | 1.36 | 1.13 | 1.63 | 1.13 | 1.41 |
| 3. Narrowing the research focus | 1.23 | 1.36 | 0.57 | 0.97 | 0.60 | 1.00 |
| 4. Intensifying the importance of research gaps | 0.90 | 1.77 | 2.57 | 2.98 | 2.00 | 2.18 |
| 5. Justifying the importance of gaps in literature | 0.63 | 1.07 | 1.67 | 2.14 | 1.80 | 2.41 |
| 6. Demonstrating the value of present research | 4.13 | 3.69 | 2.03 | 3.01 | 0.43 | 1.01 |
| 7. Demonstrating the value of research findings | 1.07 | 1.74 | 0.40 | 1.25 | 0.13 | 0.43 |

### 4.2.1. Establishing the value context

For this function, the ANOVA did not find a significant effect of discipline, $F(2,87) = 0.180$, $p = 0.835$, $\eta^2 = 0.004$, indicating that the function was equally frequent in APL ($M = 1.87$, $SD = 1.51$), PSY ($M = 2.00$, $SD = 1.49$), and PHY theses ($M = 2.10$, $SD = 1.52$). Qualitative analyses did not reveal any difference in how this function was realised across the disciplines. As can be seen in the examples below, the nominal phrases as subjects present the broad topics that establish the value context: *vocabulary knowledge* (Example 20), *the brain* (Example 21), and *two dimensional (2D) materials* (Example 22). In Example 20, the value-laden word *crucial* and the verb phrase *has always been regarded* emphasise the significance of the topic, setting the context for the research. Example 21 uses the value-laden superlative adjective *most critical* to stress the essentiality of the brain, its role, and cruciality in the human body. Example 22 employs the value-laden words *promising*, *novel*, *intriguing*, *functional*, *intense*, and *global* to assert the importance of the 2D materials, setting the context for its investigation.

**Example 20**:
"**Vocabulary knowledge has always been regarded** as a **crucial** part of language learning." (APL8)

**Example 21**:
"**The brain** is the **most critical** organ of the human body *because* it is responsible for making decisions and giving commands to other organs." (PSY27)

**Example 22**:
"**Two dimensional (2D) materials** as a **promising** platform for investigating **novel** physics, exploring **intriguing** phenomena, and designing **functional** materials have attracted the **intense** attention of **global** researchers." (PHY23)

### 4.2.2. Adding value reasons

No significant main effect of discipline was found for this function, $F(2,87) = 0.082$, $p = 0.921$, $\eta^2 = 0.002$. It occurred with similar frequencies in APL ($M = 1.27$, $SD = 1.36$), PSY ($M = 1.13$, $SD = 1.63$), and PHY theses ($M = 1.13$, $SD = 1.41$). Textual analyses revealed that this function is cumulative, establishes the research territory, and provides supplementary support for the value of present research, as illustrated in Examples 23 to 25. In these examples, the subject of the second sentence is either semantically identical to (Example 23) or pronominative for (Examples 24-25) the subject of the preceding sentence, with further reasons for the value claims provided in the predicates.

**Examples 23**:
"**The new media practices** have been very interesting for linguistics because they usually include a communicative dimension. **New media websites** provide unique and novel affordances that have been utilized in unforeseeable and creative ways (Hutchby, 2001)." (APL16)

**Examples 24**:
"**Insomnia**, once developed, may become a chronic medical condition with a persistence rate varying from 20 % to 60 %. **It** is recognized as a major public health issue and has been found to be associated with a constellation of negative

consequences, such as daytime functional impairments, an increased risk for accidents and suicide, and a higher likelihood of physical and mental comorbidities." (PSY22)

**Example 25**:

"In the current state, **optical manipulation** is a widely-used technique not only in biological science and atomic physics, but also in colloidal science and other fields that individual small particles play a role. **It** has provided researchers with a powerful tool, which acts like an invisible hand to manipulate the microscopic world." (PHY22)

In adding value reasons, APL and PHY theses preferred to move from a wider perspective to a specific one, as illustrated in Examples 23 and 25. This notwithstanding, APL theses frequently used citations to support value reasons either in the first or second sentences. PSY theses provided statistics and other estimations to emphasise the impact of the value topic from a specific perspective to a broader perspective (Example 24).

### 4.2.3. Narrowing the research focus

A significant main effect of discipline was detected for this function, $F(2,87) = 3.350$, $p = 0.040$, $\eta^2 = 0.072$. The independent variable accounted for 7.2 % of the variance in the dependent variable. Tukey's Test revealed a marginally significant difference ($p = 0.062$) between APL ($M = 1.23$, $SD = 1.36$) and PSY theses ($M = 0.57$, $SD = 0.97$), and a non-significant difference ($p = 0.080$) between APL and PHY theses ($M = 0.60$, $SD = 1.00$).

Textual analyses revealed that APL theses used more explicit and specific narrowing markers (*in particular*, *particular*, *specifically*, and *particular emphasis*) to signal this function compared to the more implied ones found in PSY and PHY theses. Also, in a few instances, APL and PHY theses tended to further refine their research focus, extending the VA to a third sentence. For instance, Example 26 moves from the more general research focus on *the literature on short-term SA programs* to a more specific focus on *the L2 identities, and language and cultural learning of pre-service L2 teachers from Hong Kong* and then to an even narrower focus on *practical suggestions to* support *and enhance the language and culture learning of short-term SA students from Greater China*. In both Examples 27 and 28, the participial phrase *resulting in* introduces the narrower research focus in the second VA.

**Example 26**:

"This study aimed to contribute to **the literature on short-term SA programs**, with a particular emphasis on **the L2 identities, and language and cultural learning of pre-service L2 teachers from Hong Kong**. In particular, it sought to offer **practical suggestions to** support **and enhance the language and culture learning of short-term SA students from Greater China**." (APL24)

**Example 27**:

"**The core symptoms of ASD** are extremely complex. They manifest in different forms and vary across different age groups, resulting in **different emotional and behavioural difficulties** (Esbensen et al., 2009)." (PSY8)

**Example 28**:

"**Doping of carbon nanomaterials** have been shown to alter drastically their electrical characteristics. Similarly, **doping GQDs with chemically bonded N atoms** is able to open up a realm of electronic possibilities and provide more active optical sites, resulting in **new phenomena and unique properties**." (PHY9)

### 4.2.4. Intensifying the importance of research gaps

The ANOVA run for this function yielded a significant main effect of discipline, $F(2,87) = 3.856$, $p = 0.025$, $\eta^2 = 0.081$. The independent variable accounted for 8.1 % of the variance in the dependent variable. Post hoc pairwise comparisons revealed that APL theses ($M = 0.90$, $SD = 1.77$) differed significantly from PSY theses ($M = 2.57$, $SD = 2.98$, $p = 0.021$). However, neither of them – APL ($p = 0.175$) and PSY ($p = 0.624$) – differed from PHY theses ($M = 2.00$, $SD = 2.18$).

A close examination of VAs serving this function revealed that they highlighted why addressing an identified gap was crucial. Despite the significant main effect identified, as demonstrated by Examples 29 to 31, no discipline-specific preferences were noted. The VAs were usually signalled by *however* after a gap was identified in the preceding sentence. Other less frequently used signalling words included *nevertheless, despite, little* and *less*. Example 29 underscores the gap in writing assessment by showing that it has received less attention and by juxtaposing this gap with the growing significance of L2 writing. In Example 30, the gap is intensified by first establishing the high prevalence of negative impacts of insomnia, and then pointing out the lack of focus on a specific age group (middle-aged adults). Example 31 implies a gap in the extensive research on weak and strong interactions of molecular self-assemblies in the first sentence and intensifies the gap in the second sentence by highlighting the little attention given to weaker interactions, which are also important.

**Example 29**:

"Writing assessment is reported to receive less attention compared to the assessment of reading and listening skills (C. Zhang, Yan, & Liu, 2015). **However**, there has been growing evidence that shows the significance of L2 writing among researchers and practitioners in China who have made efforts to connect with L2 writing community across the globe." (APL27)

**Example 30**:

"Given the high prevalence and its associated negative impacts of insomnia, growing studies have investigated both the consequences and treatments of this particular sleep problem. **However**, most of these studies were conducted among the middle-aged adults, with less focus on adolescents and young adults." (PSY22)

**Example 31**:

"Previous experimental research has extensively studied both weak and strong interactions (from hydrogen bonds to coordination bonds) [74] in all sorts of molecular self-assemblies. **However**, *very little attention* has been paid to much weaker interactions, such as the dispersion force." (PHY4)

### 4.2.5. Justifying the importance of gaps in the literature

A significant main effect of discipline was detected for this function, $F(2,87) = 3.182$, $p = 0.046$, $\eta^2 = 0.068$. The effect size was a little above Cohen's threshold for a medium effect. Post hoc Tukey's Test showed that APL theses ($M = 0.63, SD = 1.07$) marginally differed ($p = 0.060$) from PHY theses ($M = 1.80, SD = 2.41$). However, PSY theses ($M = 1.67, SD = 2.14$) did not differ significantly from APL ($p = 0.109$) and PHY theses ($p = 0.962$).

Supporting the ANOVA results, a close textual examination of this function revealed that APL and PSY theses were more direct in answering the "value question" (Carter, 2016) which justifies the importance of the gap, whereas PHY theses were more indirect. As illustrated in the second sentence of Examples 32 and 33, there are explicit statements of value that provide the rationale for the gaps described in their first sentences. For instance, in Example 32, the VA in the second sentence justifies the significance of citation practices in literature reviews. However, Example 34 indirectly justifies the gap without describing the reason for its importance, requiring more inference from readers.

**Example 32**:

"Finally, *despite* abundance/plethora of ERPP instructional materials, *very few* deal with what gets cited in literature reviews of research articles. The findings of the present study will thus provide some useful pedagogical insights into what writers tend to cite in various moves of LRs of writing of a particular paradigm." (APL6)

**Example 33**:

"Students with ASD have *difficulties* adjusting to the school environment and show resistance to conventional disciplinary strategies (Eaves & Ho, 1997; Lecavalier et al., 2006). Conducting interventions equipping them with fundamental skills (social-communication and emotional skills) and school skills (pro-social and EF skills) together with self-regulation skills are needed to enhance their school adjustment." (PSY24)

**Example 34**:

"*Although* large area 2D h-BN can be grown by CVD now,[78-79] *limited study* shows the application of h-BN in thermal management. The effectiveness of 2D h-BN in heat dissipation requires to be further investigated." (PHY11)

### 4.2.6. Demonstrating the value of the present research

The ANOVA yielded a significant main effect of discipline, $F(2,87) = 13.066$, $p < 0.001$, $\eta^2 = 0.231$. The effect size far exceeded Cohen's threshold for a large effect. Post hoc comparisons revealed that APL theses ($M = 4.13, SD = 3.69$) differed significantly from PHY ($M = 0.43, SD = 1.01$; $p < 0.001$) and PSY theses ($M = 2.03, SD = 3.01, p = 0.013$). However, the latter two groups did not differ significantly from each other ($p = 0.076$).

Textual analyses identified marked differences in how each of the disciplines constructed the value of the overall research. APL theses used more noun phrases (such as *this project*) as topics to mark the value of the theses, as illustrated in Example 35. They also frequently used explicit VAs in stating the value of the theses. However, PSY and PHY theses used more self-mentions (*I* and *we*) in stating their research value, as demonstrated in Examples 36 and 37. In terms of the application of research (Carter, 2016), APL theses explicitly stated the study's application (Example 35). In contrast, PSY and PHY theses implied theirs, for instance, through *SMW implementation* and *extensive applicability* in Examples 36 and 37, respectively.

**Example 35**:

"**This project** is **valuable** *because* it has as a key focus the matter of exploring the Linguistic Relativity Principle through SFL." (APL18)

**Example 36**:

"**In this study**, **we** provide *new* empirical evidence on this issue from Hong Kong, where the *first SMW* [statutory minimum wage] was implemented in 2011." (PSY15)

**Example 37**:

"**I** also reveal the *impressive* performances of the fabricated nanoarrays in optical, electrical and mechanical respects, which suggest their *extensive applicability*." (PHY20)

### 4.2.7. Demonstrating the value of research findings

The ANOVA detected a significant main effect of discipline, $F(2,87) = 4.354$, $p = 0.016$, $\eta^2 = 0.091$. Post hoc pairwise comparisons revealed that APL theses ($M = 1.07$, $SD = 1.74$) used this function significantly more frequently ($p = 0.014$) than PHY theses ($M = 0.13$, $SD = 0.43$), but did not differ significantly ($p = 0.107$) from PSY theses ($M = 0.40$, $SD = 1.25$). PHY and PSY theses did not differ significantly ($p = 0.693$) from each other.

Textual analyses revealed differences in how the disciplines constructed value for their research findings. APL theses usually grounded the importance of the research findings in their practical application (Example 38), PSY theses focused on the theoretical explanatory potential of results (Example 39), whereas PHY theses prized novelty in terms of methodological approaches (Example 40). Despite these cross-disciplinary differences, all disciplines preferred to use similar noun phrases such as *the findings* (Example 38), *the results* (as in Examples 39 and 40), *the outcome*, and *the study's* (*thesis', research's*, or *project's*) *findings* to directly refer to the research findings and implicitly argue for their value.

> **Example 38**:
> "*Applicatively speaking*, **the research findings** *are expected to be applied to* computational technologies such as automatic text classification and semantic role labelling." (APL1)

> **Example 39**:
> "**The results** can distinguish *possible explanations* for an effect of non-spatial properties on spatial judgements." (PSY27)

> **Example 40**:
> "**These results** offer *a new route* to investigate the complicated coupling between AF phase and FM phase in single-layer LMO thin films." (PY10)

## 5. Discussion

### 5.1. Disciplinary variation in formal classes of value arguments

As presented in the preceding section, the quantitative results showed significant disciplinary variation in explicit VAs, with APL theses using such VAs more frequently than PSY and PHY theses did. One possible explanation for the greater use of explicit VAs in APL theses could be that the discipline is more discursive (Hyland, 2005b) since there are "fewer unified and established theoretical bases for knowledge construction" (Deng et al., 2024, p.8). This finding aligns with Hu's (2018) observation that knowledge in soft disciplines like APL tends to be value-laden and relies heavily on explicit argumentation. Additionally, APL's focus on addressing real-world language issues and developing practical solutions would naturally encourage doctoral students to articulate their research's societal relevance more explicitly. This may explain why APL theses were more likely to use explicit VAs to directly state the value of a study, in contrast to PSY and PHY theses, which seem to follow a positivist research paradigm that highlights objectivity and neutrality in their research (Becher, 1994; Becher & Trowler, 2001).

The quantitative analyses revealed markedly greater frequencies of implicit VAs across the disciplines than those of explicit and semi-explicit VAs, corroborating Azizi et al.'s (2022) and Carter's (2021) findings about an overall greater use of implicit VAs in RAs. This cross-disciplinary preference can be explained in terms of shared disciplinary communication practices. Implicit VAs are rhetorical strategies whereby authors respect readers' autonomy to foster active engagement with their research (Hyland, 2001), serving a more "persuasive promotional rhetoric" (Martín & Pérez, 2014, p.1). They help authors persuade readers non-intrusively through their own interpretations (Carter, 2016; Martín & Pérez, 2014). As Azizi et al. (2022) pointed out, "[w]hen writers discuss the importance of a topic indirectly, it may serve its purpose more effectively" (p.7). Thus, the shared preference for implicit VAs reflected the "pressure on academics to promote their research strategically" (Chen & Hu, 2020, p.10).

The textual analyses also revealed disciplinary preferences and differences in the formal classes of VAs. APL theses used diverse evaluative lexis that emphasised practical importance. This reflects how APL as a soft discipline "depends vitally on the use of language to construct ideas" (Hu, 2018, p.559) and craft persuasive arguments (Hyland, 2005a). By contrast, PSY and PHY theses used a markedly smaller variety of evaluative items, with PSY stressing general significance and broad social relevance, and PHY focusing on fundamental and universal natural processes. These disciplinary preferences seemed to follow from the more structured knowledge bases and generally accepted methodological principles operating in the two disciplines (Becher & Trowler, 2001; Hu, 2018). Thus, in these disciplines, legitimation of one's research depends more on its positioning in the disciplinary knowledge base and the empirical authority resulting from the application of universally accepted principles of inquiry and methods of validation than on individual evaluative lexis. This explains the less use of evaluative vocabulary to claim importance in the theses of these disciplines. Finally, PHY theses were more likely to position value reasons before claims. This could reflect the discipline's deductive reasoning habitus (Bourdieu, 1977) and preference for objectivity and empirical observation (Becher & Trowler, 2001; Hu, 2018).

### 5.2. Disciplinary variation in functional classes of value arguments

Our quantitative analyses revealed that APL theses used more VAs for narrowing the focus of the research than PSY and PHY theses did, although the difference was only marginally significant. This could be attributed to the epistemological

orientation and the dominant knowledge structure of the disciplines (Hu, 2018). Soft disciplines like APL deal with historically and socioculturally situated knowledge that requires the clear specification of research context and focus (Hu, 2018), supported by explicit signposts of progression for readers (Hyland, 2005a), such as *specifically*, *a particular emphasis* and *in particular* (Example 26). However, PHY and PSY rely on shared disciplinary knowledge with broader, discipline-wide recognised relevance (Berkenkotter & Huckin, 1995), allowing a more implicit narrowing of the research focus. This is reflected in the use of the participial phrase *resulting in* to narrow the focus (Examples 27 and 28).

Instances of intensifying the importance of research gaps varied in frequency across the disciplines: PSY theses used this function more frequently than APL theses did, and PHY theses fell somewhere in between. Similarly, instances of justifying the importance of gaps in literature varied significantly in frequency between APL and PSY theses. The frequencies of these two functions are considered together here because the two functions are both concerned with accentuating the importance of an identified research gap, the only difference being where they are positioned in relation to the identified gap (i.e., before or after it). The markedly more frequent use of these two types of VAs by PSY and PHY theses than by APL theses could be explained by the relative competitiveness of the disciplines. Both PSY and PHY are long-established disciplines with large numbers of researchers, whereas APL is a young discipline with a smaller community of researchers. According to the latest statistics based on Scopus data (Ioannidis, 2023), there are 120,006 authors of publications in psychology and cognitive sciences, 73,580 in general physics, and 19,042 in languages and linguistics, of which APL is a subdiscipline. As a result, PSY and PHY are highly competitive research environments in comparison with APL (Berkenkotter & Huckin, 1995; Neumann et al., 2002); PSY and PHY researchers are under much greater pressure to promote their research (Hyland & Jiang, 2018; Wang & Hu, 2024) than their APL counterparts are. To intensify or justify the importance of the identified gap that one's own research bridges is an effective way to hype the value of one's work and win the attention of the disciplinary community.

Our quantitative results also showed that APL theses used VAs to demonstrate the value of the present research more often than PSY and PHY theses did. This tendency could again be explained in terms of the discursive nature of knowledge-making in a soft discipline and its heavy reliance on explicit argumentation (Becher & Trowler, 2001; Author, 2018). This could also explain APL theses' more frequent use of VAs to demonstrate the value of research findings than that of PHY theses. To elaborate on the value of one's own study or findings represents a forthright argument for the importance and contribution of one's own research. Surprisingly, textual analyses revealed PHY and PSY theses used self-mentions (*I* and *we*) (Examples 36 and 37) more frequently. This contradicts Hyland's (2001) previous finding and challenges the notion that hard and pure disciplines downplay human agency (Hu, 2018; Maton, 2000). The textual differences could be a function of the genre in question, but they could also reflect a shift in academic discourse from an "author-evacuated and data-oriented style toward more engaging, intimate and egalitarian relationship-building with readers" (Wang & Hu, 2023a, p.15). Notably, APL theses' tendency to promote the value of their research findings mainly in terms of their practical applications aligned well with the applied nature of the discipline. In a similar vein, PSY theses' greater emphasis on the theoretical explanatory potential of research findings accorded well with the discipline's pursuit of a theoretical understanding of human behaviours and minds (Wang & Hu, 2023a, 2023b). PHY theses' valuing of research findings in terms of methodological contributions reflected the discipline's prizing of methodological rigour (Hu, 2018).

## 6. Conclusion

VAs serve promotional purposes in academic writing. Using Carter's (2016, 2021) conceptual framework, we examined VAs as promotional strategies in 90 doctoral theses submitted to the UGC-funded universities in Hong Kong. Although we found no difference in the use of semi-explicit and implicit VAs, we observed significant disciplinary differences in the use of explicit VAs, with APL theses employing them more frequently than PSY and PHY theses did. Regarding the functional classes of VAs, the disciplines showed similarities in establishing the value context and adding value reasons. However, significant differences were found in the use of VAs to narrow the focus of a study, intensify the importance of research gaps, justify the importance of gaps in literature, demonstrate the overall value of the research, and demonstrate the value of research findings. These results evidence the influence of disciplinary knowledge-making practices on promotional rhetoric (Martín & Pérez, 2014). They also demonstrate that VAs, as promotional strategies, are crucial to the legitimation of doctoral students' knowledge claims and their status as legitimate contributors to knowledge.

Our findings have several implications. First, the findings demonstrate that Carter's VA framework is not only applicable to RAs but also offers an important perspective to explore the rhetorical construction of value in doctoral theses. This expansion opens avenues for further research on promotional strategies in academic discourse, particularly in understudied genres such as grant proposals and theses/dissertations. Second, the findings underscore the importance of fostering promotional language literacy in advanced academic writing instruction to support doctoral students in effectively communicating the value of their research to their intended readers. This can be achieved by explicit instruction in the use of VAs that would not only deepen doctoral students' understanding of academic writing but also enhance their ability to promote their research effectively. Third, the findings accentuate the need to attend to disciplinary differences in the use of promotional strategies in academic writing. ESP writing pedagogy should be tailored to disciplinary preferences and adapt to different disciplinary rhetorical conventions. Finally, doctoral thesis supervisors, as disciplinary insiders, can and should socialise their supervisees into disciplinarily appropriate promotional strategies and rhetorical conventions. This can help their students develop the skills to craft persuasive VAs, enhance the quality of their thesis research, and transfer such skills to RA writing and publishing in peer-reviewed academic journals.

Despite its useful findings and implications, this study has several limitations that future studies could address. First, our study drew on data from only three disciplines, and its findings may not be extrapolatable to other disciplines. Further research can include more and different disciplines to develop a fuller understanding of VAs in doctoral theses. Second, we sourced the theses from Hong Kong universities. While this provided a uniform context for our study with the benefits of "controlling" differences in educational contexts and larger sociocultural milieu, our findings may not be generalisable to other educational contexts. Future research could utilise a similar research design to collect and analyse theses from a different educational context to verify and expand the findings of our study. Finally, the findings are based on our perspective as text analysts. Therefore, future studies can tap into insiders' perspectives by interviewing thesis authors about their considerations in the use of VAs.

### CRediT authorship contribution statement

**Guangwei Hu:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Conceptualization. **Emmanuel Mensah Bonsu:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization.

### Funding statement

### Data availability

Data will be made available on request.

### Declaration of competing interest

None

### Appendix A. Coding Scheme for Value Arguments

*Formal Classes of Value Arguments*

*Explicit Value Arguments*
These arguments have explicit value claims (using words such as *important*, *relevant*, *novel*, *essential*, *crucial*, etc.) and explicit value reasons (marked by *because*, *due to*, *since*, *as*, etc.). In Example 1, the value claim is "CCW is important" and the value reason is "as the features of Chinese characters contribute to the importance of CCW".

> Example 1: "CCW [Chinese character writing] is important and should not be overlooked, as the features of Chinese characters contribute to the importance of CCW." (APL)

*Semi-explicit Value Arguments*
These arguments have explicit value claims (using the same value markers as explicit value arguments) but have implied reasons (i.e., with no reason markers). In Example 2, "[i]t is very important" is the explicit value claim, and the reason is implied in the for-infinitive clause (for children to develop …).

> Example 2: It is very important for children to develop self-regulation and learn to cope with unfulfilled expectations and conflicting goals during this period (Markus & Nurius, 1984). (PSY)

*Implicit Value Arguments*
These arguments have implied value claims and reasons. They rely on value-laden words (e.g., intensifiers, connotations, attributive and predicative adjectives, comparisons) to signal importance. Hence, readers must infer the value argument based on these linguistic cues. As shown in Example 3, the claim and reason are implied; however, the sentence signals importance through value-laden markers such as *profound knowledge*, *can contribute*, and *right*.

> Example 3: The study of dynamics of confined liquids in a methodical manner can contribute to a profound knowledge in choosing the right electrode electrolyte pair for supercapacitor applications. (PHY)

*Functional Classes of Value Arguments*

*Establishing the value context*
This function involves using arguments in the first or second sentence of an introduction to provide the broad value within which the research derives its importance. In Example 4, the value context is established by highlighting the generality and importance of the topic, flow-coupling.

Example 4: Flow-coupling is ubiquitous in nature. (PHY)

*Adding value reasons*

This function involves employing arguments whose subjects are the same as or pronominative for immediately preceding value arguments and whose predicate phrases provide further reasons in support of the value claim in the first argument. As illustrated in Example 5, the value argument in the first sentence states the originality of the study, and the second value argument expands on and adds to this argument by providing multiple reasons.

Example 5: This study is the first of its kind conducted in the Nepalese context. It has the potential to advance the frontier of knowledge because it systematically examines supervisory feedback in its cultural and historical contexts and provides a multi-layered perspective on supervisory feedback by bringing together the views of supervisors, students, and the researcher. (APL)

*Narrowing the research focus*

This function concerns two consecutive value arguments, the second of which establishes a more specific grammatical subject than the first argument to advance toward the specific research niche typically introduced by expressions such as *specifically* or *in particular*. As illustrated by Example 6, the research focus is narrowed from the broad topic of polarization singularities in the first sentence to a more specific one (i.e., their dependencies on various properties of scatterers) in the second sentence.

Example 6: Conventional studies rarely considered the polarization singularities in the scattering field of a sub-wavelength particle. In particular, the dependence of polarization singularities on various properties of scatterers remains unclear. (PHY)

*Intensifying the importance of gaps*

This function is achieved by value arguments that directly precede a statement of a research lacuna (usually marked by expressions such as *few*, *yet*, *however*, and *despite*) to make a stronger case for the importance of addressing it. As exemplified by Example 7, the first sentence, which is the value argument, establishes the importance of what has been done (studies focused on questioning in subject teaching). The second sentence is the gap statement marked by *however*. Thus, this function uses what is known to intensify the importance of what is not known.

Example 7: Studies conducted recently in Chinese educational contexts have primarily focused on improving the effectiveness of questioning in subject teaching lessons in primary and secondary schools (Zhao et al., 2018). However, there has been minimal research on the relationship between culture and classroom questioning practices, particularly in Chinese classrooms in recent years. (APL)

*Justifying the importance of a gap*

This function employs value arguments that follow the identification of a research gap (typically marked by expressions such as *however*, *despite*, *hence*, and *little is known*) and make the case that it is important to fill in the gap. As illustrated in Example 8, the first sentence implies the need to know about network structures (i.e., the gap statement) and the value argument, a semi-explicit one for that matter, argues why addressing this need is important.

Example 8: Network structure could explain the efficiency of information transfer and the robustness to random error [2]. Hence knowing about the structure of these networks is a crucial first step to fully understand how the systems work. (PHY)

*Demonstrating the value of present research*

This function is achieved by making an argument for undertaking the study itself. Example 9 shows the value of the research, explaining its contribution to a broader scholarly conversation as reinforced by the citations.

Example 11: Third, the present study contributes to an understanding of the complex interplay between individuals and society (Benson, 2012; Gu, 2011; Tsui, 2007). (PSY)

*Demonstrating the value of research findings*

This function consists in arguing for the importance of the findings, outcomes, or deliverables of the study in question. In example 10, the value argument directly focuses on the research findings and outlines their potential applications.

Example 10: The findings could bring new insights to developing promotional strategies and education policies for environmental protection. (PSY)

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