Abstract

The linguistic resources used by academic writers to adopt a position and engage with readers, variously described as evaluation, stance and metadiscourse, have attracted considerable attention in recent years. A relatively overlooked means of expressing a stance, however, is through a Noun Complement structure, where a stance head noun takes a nominal complement clause. This pattern allows a writer to front-load attitude meanings and offer an explicit statement of evaluation of the proposition which follows (as in “The fact that science has a history is not an argument against the possibility of scientific truth.”). In this paper we explore the frequencies, forms and functions of this structure in a corpus of 160 research articles across eight disciplines totaling 1.7 million words. Developing a new rhetorically-based classification of stance nouns, we show that the structure is not only widely used to express author comment and evaluation, but that it exhibits considerable variation in the way that it is used to build knowledge across different disciplines.

Keywords

academic writing, Noun Complement, stance, reader engagement, academic writing
1. **Stance in academic writing**

The idea that academic writing is an objective and impersonal kind of discourse, designed to deal simply with the presentation of facts, has now been largely superseded by a more constructivist view which sees it as a persuasive endeavour, saturated with the perspectives of the author. The means by which writers step into their texts to offer interpretations of their data and persuade readers of their claims have been described using a variety of terms, including *evaluation, stance, appraisal* and *metadiscourse* (e.g. Hunston & Thompson, 2000; Hyland & Guinda, 2012). A variety of linguistic features have been examined under these headings for the role they play in this persuasive activity, and analysts of academic writing have come to regard hedges, reporting verbs, directives, tense, and so on as among a wide repertoire of stance features available to authors (e.g. Fløttum, Dahl, & Kinn, 2006; Hyland, 2004 & 2005; Swales, 2004). The range of options which authors can draw on in presenting a stance towards their material, however, means that such descriptions remain incomplete. In this paper we discuss what is perhaps one of the least noticed of these interpersonal features, what we shall call “stance nouns” in noun complement constructions.

For Biber et al (1999, p. 966) *stance* is the expression of a writer’s “personal feelings, attitudes, value judgments or assessments” towards a proposition. It is something of a catch-all term used to refer to the ways writers express their personal views, authoritativeness, and presence. But authors do not construct such evaluations in a vacuum or from an infinite range of possibilities. Instead they draw on culturally available resources when they write, making choices which align them with one particular community or discipline rather than another. Any stance represents the writer’s own individual position, but it is also a position which reflects the epistemological beliefs and values of a community. Writers have to say
something new to gain credibility but they have to say it in ways that colleagues will find familiar and persuasive. This is sometimes referred to as ‘voice’ (Ramanathan & Atkinson, 1999; Tardy, 2012) or proximity (Hyland, 2012).

Stance, in other words, is not simply a personal take on something, a position towards a claim or finding, but simultaneously taps into and represents a community’s system of values. Any expression of academic stance, then, reveals proximity, the relationship between the self and community, and positioning, the relationship between the speaker and what is being said (Hyland, 2012). It is the way that academics both seek a reputation through their individuality and gain credibility as insiders.

We still decide how aggressive, conciliatory, confident, or self-effacing we want to be, so we do not sacrifice a personal voice by writing in the disciplines. We just recognise the boundaries which constrain it and which give it meaning in contrast to other possible choices. Thus stance, far from being simply a personal position, is a fit between rhetorical conventions and the persona one wishes to project, it is a writer's orientation to his or her material and his or her readers informed by “recipient design”, or how talk is shaped to make sense to the current interactants (Sacks et al, 1974: 272). Stance is therefore a community-influenced construct; an individually created presentation of a writer’s judgment, authority and credibility. It is also, however, disciplinary circumscribed, sensitive to the epistemic perspectives and conventions of the writers’ particular community regarding acceptable and persuasive perspectives on what counts as knowledge (Bazerman, 1988; Hyland, 2004).

One feature in the stance repertoire of the academic writer is the Noun Complement construction.
While attracting considerable attention in the literature, it has mainly been studied for its role as a cohesive device, and its function in conveying writer attitudes has not been systematically studied. We seek to address this gap and argue that the noun complement construction offers writers the opportunity to foreground their position towards the content of a complement clause by selecting an appropriate head noun. As we shall see, it is used extensively in academic writing and its distribution reveals the extent to which stance is a response to community variation: how it embodies both the author’s positioning to material and proximity to a discipline.

2. Noun complements and stance nouns

The Noun Complement construction is a grammatical structure in which a head noun takes a nominal complement either in the form of that clause, to-infinitive or of-prepositional clause, as in these examples from our academic corpus:

(1) The first study targeted several brand communities under the assumption that participants in these communities are highly involved consumers and likely to have relatively close ties to brands. [Marketing]

(2) Criticisms of genre-based teaching include the potential danger of reifying the power structures in which genres are embedded. [Applied Linguistics]

(3) Most people would have no reason to question the claim of its efficacy because they accept the assumption that cancer starts as a local disease. [Medicine]

“Assumption”, “danger” and “reason” in these examples are head nouns conveying a clear authorial perspective on what follows. We call these ‘stance nouns’ to denote their expression of the writer’s point of view towards the content specified in the complement clause.
Thus the “assumption” in example (1) refers to the proposition in its complement “participants in these communities are highly involved consumers and likely to have relatively close ties to brands”. Similarly in (2), the content of the “danger” is specified in the *of*-prepositional clause “reifying the power structures”. The propositional element is seen as providing semantic equivalence of the stance term, so that the claim or information is what is being assumed or seen as potentially dangerous (Francis, 1986; Schmid, 2000). It can also, however, offer qualification and completion, as in the *to*-infinitive complement in (3). Here the proposition in the complement does not semantically identify what the “reason” is but qualifies it, conveying the writer’s position towards that information. Despite this difference, we have also included ‘to complements’ in our analysis to better understand the functioning of stance nouns and the contexts in which they operate.

While stance nouns comprise a finite set of items (Winter, 1977), they are nevertheless very frequent in academic discourse (Charles, 2007; Coxhead, 2000; Flowerdew, 2015; Gardner & Davies, 2013). Because of this, they have attracted considerable attention in the literature, albeit under a range of different names. For Halliday & Hasan (1976) they are *general nouns*, for Ivanič (1991) *carrier nouns*, for Francis (1986) *anaphoric nouns*, for Flowerdew (2003, 2015) *signaling nouns* and for Schmid (2000) they are *shell nouns*. Less centrally, they also appear as *deverbal nouns* (Akimoto, 1990), *enumerable nouns* (Tadros, 1994) and *metalanguage nouns* (Winter, 1992). As many of these labels suggest, however, authors have largely been concerned with the discourse-organizing functions of these nouns, focusing on the way they act as cohesive devices by “enclosing or anticipating the meaning of the preceding or succeeding discourse” (Aktas & Cortes, 2008: 3).
Thus, Francis (1986) investigated how these nouns referred back to information in moving the discourse forward, then later focused on their role in cataphoric prediction (1994); Ivanič (1991) extended this cohesive function by discussing how they can not only refer to information in the text but also to background knowledge outside it. Flowerdew (2003) also discusses how “signalling nouns have important discourse functions in establishing links across and within clauses”, comparing their use in lectures, journal articles, and textbook chapters and their distributions across five disciplines (Flowerdew & Forest, 2015). Schmid’s (2000) book length treatment of these nouns takes a more psycholinguistic perspective, seeing them as “conceptual shells” which function to link parts of texts and so activate people’s cognitive models in processing discourse. Although these authors acknowledge the evaluative function and interpersonal meaning of these nouns when discussing their role in organizing discourse, they fail to give a systematic exploration of the stance-making features of these nouns.

Few authors, in fact, have examined the stance-making roles of *Noun Complement* clauses. For Biber et al (1999), Biber (2006) and Hyland and Tse (2005), however, complement clauses are an important way by which writers can grammatically mark their stance by foregrounding their attitude to accompanying propositions. Although Biber (2006, p. 93) gives some illustrations of what he calls epistemic, attitude and communication nouns, however, he focuses mainly on the more frequently occurring verb and adjective complement clauses.

Charles (2007) also recognizes the stance functions of *Noun Complement* clauses, but restricted her analysis to the *N + that* pattern. Her analysis followed the five categories of *idea, argument, evidence,*
possibility and others found in in Collins COBUILD Grammar Patterns (Francis et al, 1998). There is not, however, always a good fit between instances and categories, so while related to evidence and possibility, for example, the noun “fact” appears in others. Charles does not explain her classification and concerns herself only with $N + that$ constructions in the four main groups, but this is unduly restrictive and we see a much wider role for head nouns performing stance functions. In our analysis we include a more exhaustive list of items and offer a more comprehensive categorization which includes all such nouns retrieved from a large academic corpus.

Unlike previous studies, then, we emphasize that the choice of head noun does more than simply structure discourse or specify the content of an empty shell. Instead, we see it playing a key role in the rhetorical construction of a writer’s argument. It is a powerful persuasive device as the choice of noun foregrounds an author’s assessment of the reliability of what follows and indicates to readers how the material should be understood. Thus the writer in (4) chooses the word “mistake” to show his view that the information provided in the complement “making the individual fully heteronomous by locating the sovereign source of normativity outside the individual” is incorrect.

(4) Collectivism makes the **mistake** of **making the individual fully heteronomous** by locating the sovereign source of normativity entirely outside the individual in the community.  

[Philosophy]

We can also see in this example of stance-making a process of nominalization (Halliday & Matthiessen, 2013) where the writer packages an event as a thing. Thus the action of “making the individual fully heteronomous by locating the sovereign source of normativity outside the individual” becomes an object which can be encapsulated in the stance noun “mistake”. In this way the stance noun contributes to the force and effectiveness of the argument by establishing the writer’s position.
towards the proposition from the outset. The writer’s stance is the starting point of the message and the reader is asked to accept it as given, thus attempting to forestall disagreement and gain acceptance of the perspective.

The operation of a persuasive intent is also clear in this example:

(5) Rawls would likely reject Kant’s **claim** that only a justification proceeding entirely in terms of freedom can meet the standard.

Here the writer chooses the word “claim” rather than “conviction” or “assertion”, to label the content of the complement as somehow disputed or not altogether agreed. By nominalizing the complement, the stance noun “claim” enfolds the proposition and marks it as somewhat untrustworthy, so seeking to sway the reader’s interpretation. Additionally, however, we can see here that the writer attributes this “claim” to Kant rather than himself. Interestingly, through this premodification of the head noun, the stance is attributed to another, more celebrated, thinker, perhaps as a means of floating the writer’s own belief while simultaneously anticipating readers’ possible disagreement.

In sum, the **Noun Complement** construction, by offering a range of stance choices and the possibility of pre-modification, enables writers to construct a clear stance at the outset as a way of bringing readers into alignment with that stance. Furthermore, as we noted earlier, this stance is contextualized in the perspectives and conventions of a particular discipline and, therefore, realizes a set of epistemological assumptions and rhetorical practices shared with readers. The remainder of this paper elaborates these ideas by presenting a model which seeks to unpack the rhetorical work being done by stance nouns in academic writing. We will first describe our method and classification scheme, then
go on to answer the following questions:

(1) What stance options are available to academic writers through choices of head nouns?

(2) Do writers explicitly aver this stance or attribute it to others?

(3) To what extent do members of different disciplines differ in their choice of stance nouns and categories?

3. Corpus and analysis

This paper draws on our analysis of a 1.7 million word corpus of 160 research articles from eight disciplines (applied linguistics, marketing, sociology, philosophy, electronic engineering, medicine, cell biology). These disciplines span the spectrum of academic practice from the hard physical sciences to the more rhetorical humanities and social sciences. Two research articles were randomly selected from each of ten internationally refereed journals in each discipline. The corpus was part of speech tagged using Tree Tagger then searched for the N that, N to-infinitive and N of-preposition structures on the basis of syntactic information through regular expression query, using the concordance software AntConc (Anthony, 2011). We further conducted a manual reading of concordance lines to improve the accuracy of the parsing and ensure all Noun Complement clauses had been identified.

Following the compilation of the corpus and identification of N complements, we sought to create a categorization scheme for the stance nouns through careful analysis of concordance lines. Finally, we coded all the stance nouns using this scheme and analyzed their pre-modification as averral or attribution using MAXQDA, a commercial qualitative data analysis tool (Kuckartz, 2007).
frequency of the stance nouns in different subgroups and categories and the frequency of different complement clausal patterns were counted, on the basis of which comparisons were made across different disciplines and among different complement clausal patterns. Both authors then independently analyzed a sample of nouns in the corpus to ensure we were counting the same things in the same way to facilitate replication by others.

In developing our categorization we were aware of earlier work in the literature. Previous studies, however, have largely focused on the semantic, rather than the functional characteristics of these nouns. Schmid (2000), for example, classifies them as factual, linguistic, mental, modal, eventive and circumstantial types. Thus, for him, the noun “advantage” falls into the factual group presenting the complement information as uncontested. Unfortunately this overlooks its role in conveying a writer’s positive evaluation of an entity or action, as in this example:

(6) The procedure offers the **advantage** of obtaining more precise structural estimates. [Marketing]

Another problem with previous models is the porous nature of the categories. So classifying nouns in terms of their semantic meaning, for example, results in the word ‘fact’ appearing in both the factual and epistemic modal categories. Obviously, such an overlapping classification fails to distinguish the clear rhetorical options that stance nouns make available to authors and does not allow us to make comparisons of different uses across disciplines. For example, consider the very different positions taken in these two extracts:

(7) In spite of the **fact** that a large quantity of works have been done of the vibrational properties of CNTs 9,10, only few experimental studies have been
developed on the counterparts BNNTs 149,223. [Physics]

(8) What should be discussed at this point is the fact that EMAP-II levels in the serum did not coincide with the levels presented in the tumors by the immuno-histochemical analysis. [Medicine]

It seems to us that the authors are taking very different stances in the two statements: the first is presenting a clear assertion of what he sees to be the truth of a particular research finding, claiming that something actually happened while the second author uses a weaker assertion to offer a possible explanation of a result. The use of “in spite of” in (7) signals that “the fact that” marks a contrast with the background information of the main clause; an evaluative use of “the fact that” which presents an assessment of a particular research finding as taken-for-granted assumption. In example (8), on the other hand, the writer is focusing more on portraying what has happened in an experiment rather than asserting its truth.

4. A model of stance nouns

These difficulties prompted us to devise a more water-tight functional classification and, after numerous independently conducted sweeps through the corpus, we produced the classification presented in Table 1. This shows that head nouns are functionally used either to mark entities, describe attributes of entities or discuss the relations between entities.
Table 1 classification of stance nouns in the *Noun Complement* construction

<table>
<thead>
<tr>
<th>Entity</th>
<th>description</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>object</td>
<td>concretizable metatext</td>
<td>report, paper, extract</td>
</tr>
<tr>
<td>event</td>
<td>events, processes, states of affairs</td>
<td>change, process, evidence</td>
</tr>
<tr>
<td>discourse</td>
<td>verbal propositions and speech acts</td>
<td>argument, claim, conclusion</td>
</tr>
<tr>
<td>cognition</td>
<td>cognitive beliefs and attitudes</td>
<td>decision, idea, belief, doubt</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>description</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>quality</td>
<td>traits that are admired or criticized, valued or</td>
<td>advantage, difficulty, value</td>
</tr>
<tr>
<td></td>
<td>depreciated</td>
<td></td>
</tr>
<tr>
<td>manner</td>
<td>circumstances of actions and state of affairs</td>
<td>time, method, way, extent</td>
</tr>
<tr>
<td>status</td>
<td>epistemic, deontic and dynamic modality</td>
<td>possibility, trend, choice, ability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relation</th>
<th>description</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>cause-effect,</td>
<td>cause-effect, difference, relevance</td>
<td>reason, result, difference</td>
</tr>
<tr>
<td>difference, etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nouns which refer to **entities** do so by either orienting to objects, events, discourses or aspects of cognition. Nouns representing **objects** refer to concrete things, usually texts, so that examples such as *report, paper* and *extract* are typical in this category. **Event** nouns refer to actions, processes or states of affairs which have a spatiotemporal location and examples such as *change, process* and *evidence* are frequently used. **Discourse** nouns take a stance towards verbal propositions and speech acts, such as *argument, claim* and *conclusion* while **Cognition** nouns concern beliefs, attitudes and elements of mental reasoning, such as *decision, idea, assumption* and *doubt*.

Nouns relating to **attributes** concern judgments and evaluations of the quality, status and formation of
entities. Thus nouns pertaining to quality assess whether something is admired or criticized, valued or depreciated. Here assessments fall on a scale of plus or minus (e.g. good-bad and important-unimportant), typically involving nouns such as advantage, difficulty and danger. Nouns relating to manner, in contrast, describe the circumstances and formation of actions and states of affairs. Nouns such as time, method, way and extent depict either their dimensions in place and time, the way in which they are carried out or the frequency with which they occur. Stance nouns which concern status make judgment of epistemic, deontic and dynamic modality. Epistemic modality concerns possibility and certainty such as likelihood and truth; deontic modality bears on obligation and necessity such as need and obligation; dynamic modality describes ability, opportunity and tendency such as authority, potential and tendency.

It is, however, necessary to distinguish between epistemic judgments of status and of facts and it should be noted that our categorization resolves the question whether ‘the fact that…’ should be seen as either a representation of reality or a judgment of certainty; whether it concerns an event or an attribute. In this we follow Labov’s (1972) emphasis on the comparative nature of evaluation which helps to identify an evaluation. For him, evaluation occurs when a reference in a statement is compared to or contrasted with some background information or values (Labov, 1972, p. 381; Thompson & Hunston, 2000, p. 13), as in this example:

(9) Swan’s description of the teacher’s role ignores the fact that TBLT can include a pre-task and post-task phase, where opportunities arise for the explicit teaching of language. [Applied linguistics]

The verb “ignore” before “the fact that” clause here denotes a contrast between “Swan’s description of the teacher’s role” and “TBLT can include a pre-task and post-task phase”, suggesting that “the fact
that” is an expression of epistemic evaluation commenting on the likely certainty of “TBLT can include a pre-task and post-task phase” rather than an evidential reality. So in this case “fact” presents the writer’s judgment of the epistemic status of an entity rather than an assertion of verifiable truth and is categorized by us in the status group.

Finally in our categorization, head nouns are also used to express a stance by elaborating how a writer understands the connection or relationship to information in a proposition, conveying relations such as reason, result and difference.

(10) There is good reason to believe that such variations are at least partially explainable in cultural terms. [Philosophy]

(11) In the second step (growth), both austenite and recrystallized ferrite are imposed to grow isotropically, with the main difference that the latter can only grow at the detriment of deformed ferrite, whereas the former can overlay both types of ferrite. [Physics]

This function-based classification of head nouns therefore offers us a way to categorize the possible stances that writers take up in their texts, conveying their attitudes towards the information to follow in the complement, “how certain they are about its veracity, how they obtained access to the information, and what perspective they are taking” (Biber, 2006, p. 87).

5. Findings on overall distribution

We identified 3,437 occurrences of the Noun Complement construction in the corpus, which makes an average frequency of 21 cases in every article. The most frequent forms in the corpus were N
to-infinitive clauses. Nouns indicating the writers’ stance towards attributes of entities were the most common overall with status judgments, commenting on the certainty or necessity of something, the most frequent sub-category, comprising 25% of all stance nouns. Within the entity category, authors most often took a stance towards cognitive entities, describing beliefs or mental reasoning, and comprising 23.4% of all stance nouns. We found that stance nouns referring to objects and relations are used least of all. Table 2 summarises these counts.

Table 2 Noun Complement constructions across disciplines (per 10,000 words).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Total no. of items</th>
<th>Items per 10,000 words</th>
<th>% of total stance nouns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity</td>
<td>1636</td>
<td>9.4</td>
<td>47.6</td>
</tr>
<tr>
<td>objects</td>
<td>14</td>
<td>0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>events</td>
<td>637</td>
<td>3.7</td>
<td>18.5</td>
</tr>
<tr>
<td>discourse</td>
<td>181</td>
<td>1.0</td>
<td>5.3</td>
</tr>
<tr>
<td>cognition</td>
<td>804</td>
<td>4.6</td>
<td>23.4</td>
</tr>
<tr>
<td>Attribute</td>
<td>1657</td>
<td>9.6</td>
<td>48.2</td>
</tr>
<tr>
<td>quality</td>
<td>235</td>
<td>1.4</td>
<td>6.8</td>
</tr>
<tr>
<td>status</td>
<td>854</td>
<td>4.9</td>
<td>24.8</td>
</tr>
<tr>
<td>manner</td>
<td>567</td>
<td>3.3</td>
<td>16.6</td>
</tr>
<tr>
<td>Relation</td>
<td>145</td>
<td>0.8</td>
<td>4.2</td>
</tr>
<tr>
<td>Totals</td>
<td>3437</td>
<td>19.8</td>
<td>100</td>
</tr>
</tbody>
</table>

Turning to disciplinary distributions, we can see from Table 3 that there are considerable differences in both the frequency and functions of stance nouns across disciplines. We will discuss these differences in more detail below in the rest of this section and sections 6 - 8, but it is worth pointing out that Noun Complements occur more often in soft than hard fields, with 29.4 cases per 10,000 words in applied linguistics, marketing, sociology and philosophy, and just 8.5 per 10,000 words in
electronic engineering, medicine, biology and physics \((\log \text{Likelihood} = 6.50, p < 0.001)\). In other words, some 80% of all stance nouns occur in the more discursive soft fields.

Table 3 *Noun Complement* frequencies across disciplines per 10,000 words (% of total)

<table>
<thead>
<tr>
<th>per 10,000 ( % of total)</th>
<th>App</th>
<th>Markt</th>
<th>Soc</th>
<th>Phil</th>
<th>Elec</th>
<th>Med</th>
<th>Bio</th>
<th>Phys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entity</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>objects</td>
<td>12.8 (48.7)</td>
<td>11.4 (51.8)</td>
<td>9.4 (54.3)</td>
<td>27.9 (54.6)</td>
<td>2.2 (28.6)</td>
<td>2.4 (33.3)</td>
<td>3.1 (66.0)</td>
<td>4.3 (44.3)</td>
</tr>
<tr>
<td>events</td>
<td>6.3 (24.0)</td>
<td>3.9 (17.7)</td>
<td>3.4 (19.7)</td>
<td>6.1 (11.9)</td>
<td>1.3 (16.9)</td>
<td>0.2 (2.8)</td>
<td>1.8 (38.3)</td>
<td>2.9 (29.9)</td>
</tr>
<tr>
<td>discourse</td>
<td>1.4 (5.3)</td>
<td>1.0 (4.5)</td>
<td>1.1 (6.4)</td>
<td>3.6 (7.0)</td>
<td>0.0 (0.0)</td>
<td>0.3 (4.2)</td>
<td>0.2 (4.3)</td>
<td>0.2 (2.1)</td>
</tr>
<tr>
<td>cognition</td>
<td>5.0 (19.0)</td>
<td>6.5 (29.5)</td>
<td>4.8 (27.7)</td>
<td>18.2 (35.6)</td>
<td>0.9 (11.7)</td>
<td>1.8 (25.0)</td>
<td>1.1 (23.4)</td>
<td>1.0 (10.3)</td>
</tr>
<tr>
<td><strong>Attribute</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>quality</td>
<td>13.3 (50.6)</td>
<td>10.4 (47.2)</td>
<td>7.6 (43.9)</td>
<td>22.6 (44.2)</td>
<td>5.5 (71.4)</td>
<td>4.7 (65.3)</td>
<td>1.6 (34.0)</td>
<td>5.3 (54.6)</td>
</tr>
<tr>
<td>status</td>
<td>6.6 (25.1)</td>
<td>6.2 (28.2)</td>
<td>3.0 (17.3)</td>
<td>13.0 (25.4)</td>
<td>1.6 (20.8)</td>
<td>2.1 (29.2)</td>
<td>0.2 (4.3)</td>
<td>1.4 (14.4)</td>
</tr>
<tr>
<td>manner</td>
<td>4.1 (15.6)</td>
<td>2.1 (9.5)</td>
<td>3.7 (21.4)</td>
<td>7.4 (14.5)</td>
<td>2.6 (33.8)</td>
<td>2.0 (27.8)</td>
<td>1.0 (21.2)</td>
<td>3.1 (32.0)</td>
</tr>
<tr>
<td><strong>Relation</strong></td>
<td>0.2 (0.8)</td>
<td>0.2 (0.9)</td>
<td>0.3 (1.7)</td>
<td>0.6 (1.2)</td>
<td>0.0 (0.0)</td>
<td>0.1 (1.4)</td>
<td>0.0 (0.0)</td>
<td>0.1 (1.0)</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>26.3 (100)</td>
<td>22.0 (100)</td>
<td>17.3 (100)</td>
<td>51.1 (100)</td>
<td>7.7 (100)</td>
<td>7.2 (100)</td>
<td>4.7 (100)</td>
<td>9.7 (100)</td>
</tr>
</tbody>
</table>

It is also worth mentioning that stance nouns referring to entities and attributes are roughly evenly distributed in the soft fields, with about half of all cases in each category, while in the hard knowledge disciplines electrical engineers are far more likely to refer to attributes (71.4% of all uses) and biologists to entities (66.0%). This does, perhaps reflect something of the focus of these two
disciplines, with the former dealing with the study and application of its subject and the latter with the properties, structure and interactions of minute organisms. Given the small number of cases involved, however, not much can be made of this argument.

Overall, the fact that stance nouns most commonly refer to matters of status and cognition suggests a strong preference for abstraction over concretizable or objective entities (e.g. Schmid, 2000). The more frequent use of the noun complement structure in the soft fields is therefore not surprising as authors in the humanities and social sciences are more likely to take a stance towards what they discuss and evaluate both their own and others’ work (Charles, 2007; Hyland, 2005). Furthermore, as we mentioned above, the frequent use of this construction is influenced by nominalization in academic discourse. Although commonly associated with research writing in the physical sciences (e.g. Halliday & Martin, 1993), nominalization is also common in writing in the soft disciplines. In the hard sciences, we are used to seeing nominalization used to convey technicality:

\[
\frac{1}{M_\beta(\hat{a}, N, 2/\beta)} \sim (\Gamma(1 + 2/\beta))^{\beta} (\beta/2)^{\beta N/2} \frac{\Gamma(\beta a/2 + 1) \Gamma(\beta(a + 1)/2 + 1)}{\Gamma(\beta/2 + 1) \Gamma(\beta + 1)}
\]  

[Physics]

In the soft fields, in contrast, it helps to construct abstraction (Ädel & Garretson, 2006). As the following examples show:

(13) There is also a possibility that for new retailers to enter the market they would have to charge higher prices initially.  

[Applied linguistics]

(14) Instead, focus must be expanded to consider the forces that bring individuals
into contact and facilitate their association and **willingness to cooperate with one another**.

We can see here that the processes “they would have to charge higher prices initially” and “to cooperate with one another” have been abstracted into the nouns “possibility” and “willingness” in the nominalization process.

6. **Stance expressions through choice of head nouns**

We now turn to discuss these results in more detail and attempt to explain some of the distributions we found. We begin by looking at nouns relating to entities.

The data in Table 2 suggests that within the entity category, event and cognition types are overwhelmingly the most frequent types of stance nouns. Table 3 shows that these are not evenly distributed across the disciplines but that the soft fields use generally use more cognition than event types and that the hard sciences tend to use event types most frequently, albeit at much lower frequencies. These different choices of head nouns are not, of course, random but represent clear disciplinary preferences. They not only display the different stances writers take towards the ideas expressed in their propositions, but also suggest something of the epistemologies and practice of knowledge construction in authors’ disciplines.

We can see event and cognition are closely related to empiricism and interpretive rationality respectively, indicating different modes of knowing and sources of knowledge in the disciplines (Chafe & Nichols, 1986). Soft knowledge domains rely to a much greater extent on cognitive understanding and the construction of theoretical modes of understanding and argument than the hard
sciences while, in contrast, knowledge in the hard sciences relies far more on empirical evidence and the creation of facts through experimentation and observations (e.g. Becher & Trowler, 2001). The fact that scientists tend to use almost no discourse head nouns shows a reluctance to build arguments which rely too explicitly on discursive artifice. We might also add here, however, that applied linguistics stand out in the soft fields by taking a stance towards events far more often. This reflects the preference of this discipline for empirical and applied research with a real world focus, relying to a greater extent on cases and evidence:

(15) Our core argument is based on the fact that processing accounts are usually inexplicit in their relation to representations, but since representations … holds the explanation. [Applied linguistics]

(16) There is some independent evidence that the higher proportion of women uttering polite phrases in the American corpora might be due to women overall using polite speech routines more often than men. [Applied linguistics]

(17) There are many successful instances of showcasing Japanese cultural traditions in which English is drawn into… [Applied linguistics]

Overall, authors in the soft fields also make overwhelmingly greater use of them to evaluate the entities they discuss, amounting to 13.7 compared with 4.7 per 10,000 words (LL = 6.01, p < 0.001). Once again, this supports previous research into the features of academic writing which indicate how authors in the humanities build knowledge through arguments which depend on their personal interpretations and negotiations with readers (Becher & Trowler, 2001; Hyland, 2004). The positions taken by these writers, for example, are very clearly foregrounded by their choice of stance noun:

(18) In using the Japanese case for the purpose of contrast, there is a risk that we
assume that non-Western contexts are irredeemably different to those of the West, and hence hold little democratic potential. [Philosophy]

(19) Such segmentation has the key business advantage of serving as a basis for product development in a way that better reflects the preference patterns of consumers. [Marketing]

(20) Nevertheless, we have a duty to ensure that every child has a chance to learn what he’s capable of. [Applied linguistics]

The distinctive stance taking preferences of writers in different disciplines can be also seen from the most frequently used head nouns in each discipline. Table 4 shows the rank order of these nouns in our corpus.

Table 4 The ten most frequent head nouns in each discipline by rank

<table>
<thead>
<tr>
<th>App ling</th>
<th>Markt</th>
<th>Soc</th>
<th>Phil</th>
<th>Elec eng</th>
<th>Med</th>
<th>Bio</th>
<th>Phys</th>
</tr>
</thead>
<tbody>
<tr>
<td>way</td>
<td>ability</td>
<td>way</td>
<td>way</td>
<td>method</td>
<td>evidence</td>
<td>ability</td>
<td>fact</td>
</tr>
<tr>
<td>need</td>
<td>decision</td>
<td>fact</td>
<td>capacity</td>
<td>fact</td>
<td>method</td>
<td>evidence</td>
<td>way</td>
</tr>
<tr>
<td>fact</td>
<td>way</td>
<td>assumption</td>
<td>fact</td>
<td>way</td>
<td>ability</td>
<td>fact</td>
<td>method</td>
</tr>
<tr>
<td>attempt</td>
<td>intention</td>
<td>attempt</td>
<td>reason</td>
<td>ability</td>
<td>approach</td>
<td>approach</td>
<td>means</td>
</tr>
<tr>
<td>opportunity</td>
<td>likelihood</td>
<td>view</td>
<td>ability</td>
<td>cost</td>
<td>fact</td>
<td>hypothesis</td>
<td>advantage</td>
</tr>
<tr>
<td>approach</td>
<td>willingness</td>
<td>idea</td>
<td>idea</td>
<td>time</td>
<td>hypothesis</td>
<td>method</td>
<td>assumption</td>
</tr>
<tr>
<td>evidence</td>
<td>evidence</td>
<td>evidence</td>
<td>right</td>
<td>possibility</td>
<td>possibility</td>
<td>attempt</td>
<td>difficulty</td>
</tr>
<tr>
<td>possibility</td>
<td>fact</td>
<td>probability</td>
<td>claim</td>
<td>period</td>
<td>attempt</td>
<td>finding</td>
<td>idea</td>
</tr>
<tr>
<td>ability</td>
<td>need</td>
<td>willingness</td>
<td>belief</td>
<td>approach</td>
<td>effort</td>
<td>idea</td>
<td>possibility</td>
</tr>
<tr>
<td>process</td>
<td>opportunity</td>
<td>argument</td>
<td>sense</td>
<td>assumption</td>
<td>failure</td>
<td>inability</td>
<td>ability</td>
</tr>
</tbody>
</table>
Overall, the most frequent stance nouns in the corpus were *way, fact, ability, capacity* and *evidence* with most of the top ten occurring in manner and event categories. In terms of cognition stance nouns, *idea, assumption* and *hypothesis* are often used but *decision*, uniquely, only occurs in the top ten most frequent forms in marketing, comprising a massive 22.6% of all cognition types in that discipline.

Business studies is a field governed by pragmatism and an applied orientation so that persuasion is often assisted by recognizing the real options available to businesses and evaluating these options. Here, for example, authors attribute considerable power of agency to corporate decision-makers and so underpin the authority of marketing behaviours:

(21) Thus, a manufacturer’s **decision to distribute products through wholesalers and sales representatives with a well perceived image** is crucial for a brand’s success.  
[Marketing]

(22) Large retailers such as Aldi, Tesco or Wal-Mart often have much more power than their suppliers, and their **decision to carry a product or not can significantly affect a manufacturer’s success**.  
[Marketing]

In contrast, *reason* is alone in appearing in the work of philosophers in these lists, comprising a huge 52% of cases when writers select a stance noun to construct relations between entities (*LL = 7.40, p < 0.001*). For philosophers knowledge problems are diffuse, non-linear and often timeless, issues are revisited repeatedly, sometimes over millennia, so that claims and the warrants that support them rely on the novelty and plausibility of personal interpretation (Becher & Trowler, 2001; Hyland, 2004). As Descartes (1958, p. 198) remarks of philosophical knowledge: “our concepts of other things do not similarly contain necessary existence, but merely contingent existence”. Arguments, in other words,
are necessarily explicitly interpretive and personal and so need to be carefully structured to provide clear causes and explanations. These examples give some flavour of this:

(23) As an extension of the PLA, I will argue that for the same reasons that normativity cannot be monopolized by individuals, it cannot be monopolized by communities either. [Philosophy]

(24) But such attempts will always fail for the essential reason that an act of pure, unconditional forgiveness necessarily involves a moment of non-knowledge, a gap between the reasons one appeals to and the decision to forgive. [Philosophy]

(25) Thus an approach that ignores both possibilities – on the grounds that they cancel each other out – is not entirely implausible. [Philosophy]

It is also shown in Table 4 that electronic engineering is unusual in making considerable use of the perhaps unlikely head nouns time and period when depicting the manner in which actions are formed. These head nouns are semantically completed by the complement content to follow.

(26) The tardiness of each job is the amount of time that job is completed after its due date. [Electronic engineering]

(27) For \( 1|rcs 1|y \), let us define \( y_j = \max\{0, -N^+_j\} \), which shows the deficiency in the period of processing job \( j \). [Electronic engineering]

The relationship of electrical engineering to a commercial world which employs its insights and research in the service of industrial development and profits ensures that the manner in which work is conducted is a key factor of argumentation. Temporal accuracy and an orientation to the time taken to
carry out work over given periods therefore figure heavily in the stance taking practices of authors.

7. **Distribution of stance nouns across categories**

One final result of this study we feel is worth mentioning is the differences in the distribution of the three clausal structures across disciplines. Table 5 shows how writers use the stance construction of $N$ Complement complex in the corpus.

<table>
<thead>
<tr>
<th>Clause type</th>
<th>App ling</th>
<th>Markt</th>
<th>Soc</th>
<th>Phil</th>
<th>Elec eng</th>
<th>Med</th>
<th>Bio</th>
<th>Phys</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N + that$</td>
<td>168</td>
<td>152</td>
<td>211</td>
<td>457</td>
<td>36</td>
<td>43</td>
<td>43</td>
<td>69</td>
<td>1189</td>
</tr>
<tr>
<td>$N + to-infinitive$</td>
<td>264</td>
<td>277</td>
<td>95</td>
<td>543</td>
<td>42</td>
<td>67</td>
<td>59</td>
<td>80</td>
<td>1427</td>
</tr>
<tr>
<td>$N + of-preposition$</td>
<td>175</td>
<td>126</td>
<td>125</td>
<td>271</td>
<td>25</td>
<td>27</td>
<td>19</td>
<td>53</td>
<td>821</td>
</tr>
</tbody>
</table>

As can be seen, $N + to-infinitive$ clauses occur most frequently, comprising 41.5% of all structures followed by $N + that$ clauses with 34.6% and then $N + of-prepositional$ clauses with 23.9%. This may be, at least partly, explained by the fact we have defined the lexicalization of stance to include both semantic equivalent identity and lexical completion (see Section 2). $N + to-infinitive$ constructions, in fact, can fulfill both relationships, as we can see here:

(28) Research on person perception has shown that people with a high **propensity** to engage in interpersonal relationships exhibit a high level of behavioral activity.  
    [Marketing]

(29) As an alternative **approach** to assess the impact of nuclease amplification, we modified Rep and RepA to carry a mutation in the conserved ATPase domain.  
    [Cell biology]
In (28) the meaning of the head noun “propensity” is identified in the to-infinitive clause as “to engage in interpersonal relationships exhibit a high level of behavioral activity”, while the to clause in example (29) “to investigating the defensive role of these compounds” semantically completes the meaning of the head noun “approach”.

In contrast, + that clauses and + of-prepositional clauses generally provide only semantic identity to the head nouns. In the two extracts below, for example, the propositional information in both the that clause and of-prepositional clause do not supplement the meaning of the head nouns as in (29) above, but provide semantic equivalence of what the head nouns “proof” and “benefit” are.

(30) Thus, the chemical bonding maps of the sp2 BN lattice of the two extreme orientations…provide an additional proof that BNNTs consist of an sp2 bonded structure.

[Physics]

(31) The benefit of restricting bargaining powers in this way enables the model to identify the endogenous economic factors that affect the bargaining outcomes...

[Marketing]

N of-prepositional clauses are also used less frequently because of their more limited colligational range than the other types, as suggested by the following examples:

(32) These findings support our argument that moral decoupling does not threaten one's moral self-regard because it does not involve implicitly forgiving immoral actions.

[Marketing]

(33) And this is tantamount to an admission that the reductionist programme is stymied, because (C*) and (C**) cannot be serviceable templates for reductive definitions...

[Philosophy]
(34) We demonstrate the **feasibility** of using geminivirus replicons to generate plants with a desired DNA sequence modification. [Cell biology]

(35) However, the uniform religious behaviour of generations who shared the **experience** of growing up and maturing in a communist context has been broken by those born in the 1970s and 1980s. [Sociology]

In extracts (32) and (33) we can see the *that* clause carrying verbal actions whose actors, “moral decoupling” and goal “the reductionist programme” respectively, are not the subjects of the main sentences (“these findings” and “this”). In contrast, the actors in the two *of-prepositional* cases restricted to the subject “we” of the main sentence in (34) and to “generations” in example (35).

Interestingly, sociology differs strikingly from other disciplines in using far fewer *N + to-infinitive* clauses. Once again, this is perhaps related to the meanings they convey for authors. Biber et al. (1999) and Quirk & Crystal (1985), for example, suggest that *to-infinitive* complement clauses are commonly used to express human intention, future-oriented agency and human control over action. The following are two examples from the corpus:

(36) When conducting marketing research with their clients, suppliers should monitor their level of **commitment** to understand which clients may be at most risk. [Marketing]

(37) In recent times, astrophysics has also offered the **opportunity** to test this relation at much higher energies. [Physics]

The reluctance of sociologists to employ the form may be related to its unwelcome emphasis on agency. Berger (1963: 4) describes the epistemological orientation of the discipline as an attempt to understand the complex ways in which individual acts and behaviors influence and reflect the contexts
of social experience. Sociologists therefore tend to focus on the connection between history and biography (Thompson & Hickey, 2011) and withhold any firm predictions about the future. It is a discipline which displays a commitment to presentness and pastness. As Thompson and Hickey (2011, p. 3) acknowledge, “we can only guess what would have happened to the civil rights movement of the 1960s if the late Rosa Parks had given up her seat to the white man and moved to the back of the bus in Montgomery, Alabama, in 1955. Or what might have transpired if she had refused to do so 30 years earlier, in the 1920s” (emphasis added).

In sum, by using the Noun Complement construction, writers construct different perspectives on issues which their colleagues and peers can readily recognize as appropriate and effective, creating an appropriate and familiar stance to evaluate and define the content they present in the complement clause. We hope to have shown something of how stance nouns are used to express writers’ epistemological views and judgments on subject knowledge. The form is therefore a writer-centered epistemic and evaluative judgment in relation to disciplinary modes of knowing and social practice. In addition, a writer’s decision whether to present a stance using his or her voice through overt averral or whether to attribute that stance to another source is not an arbitrary one. On the contrary, it represents a conscious awareness of readers and of a disciplinary community so that the stance taken towards a proposition is both a personal position and a projection of a disciplinary knowledge base and value system. In the final section we turn to look briefly at the results of such decisions.

8. Averral, attribution and stance

To explore the effects of personally taking responsibility for a position (assertion) or attributing it to another (averral), we will here focus on stance nouns in the discourse and cognition categories as
these two types are most closely connected with asserted propositions. While all assertions are, ultimately, averrals (Sinclair, 1988; Tadros, 1993) we found only 5.6% of nouns in the discourse and cognition groups were explicitly averred with first-person possessives. A further 29.8% were clearly attributed to other sources so that the remaining 64.6% of propositions were given with no clear ownership but were implicit averrals.

In our corpus, the attribution of a stance to another source took the forms of either attributive possessives as in (38) or scholarly citation (39):

(38) Rather, they say that they don't know why they can't throw and, indeed, Knoblauch has criticized the media's claim to understand the cause of his condition.

[Philosophy]

(39) Moreover, Scheve and Slaughter's (2001) belief that citizens tend to weigh adverse labour market impacts of globalization heavily, and tend to be more supportive of liberalization when adequate compensation of affected groups is in place, complement our own results.

[Sociology]

The distribution of attribution and averral per 100 occurrences of discourse and cognition stance noun is shown in Table 6.
The majority of stances taken by nouns in these two groups are therefore expressed implicitly, with no overt claim of ownership. This is, of course, unsurprising given the established conventions of impersonality in academic writing which urges authors to minimize their presence and to cloak their subjective interpretations with persuasive objectivity. These uses can be seen here:

(40) This has led to the **suggestion** that altered expression of primary metabolic genes is a reflection of a shift of resources to defense. [Biology]

(41) The indirect effect accords with the **interpretation** that behavioral frequency can be viewed as a form of relationship investment. [Marketing]

(42) Because saving ultimately generates the benefits for future generations, there is an **inclination** to think that people must be saving for moral reasons, and so any contractualist theory must be able to explain saving as a form of cooperative behavior. [Philosophy]

The considerable number of multi-authored studies in the hard sciences explains the greater use of first-person plural possessives in the expression of stance in those fields:
(43) To confirm our assumption that it is a true chaos state and not a quasiperiodic motion, we performed a spectral analysis and a numerical evaluation.

[Physics]

(44) We cannot leave these questions unanswered if we are to achieve our goal of training a workforce that is well prepared for interdisciplinary team science.

[Medicine]

In contrast, the need to build intertextual connections with a literature which is often diverse and potentially unfamiliar to readers helps account for the higher frequency of stance nouns in citation formats in the soft disciplines:

(45) Quinn, Doorley, and Paquette's suggestion that “a maintainable advantage usually derives from outstanding depth in selected human skills, logistics capabilities, knowledge bases, or other service strengths that competitors cannot reproduce and that lead to greater demonstrable value for the customer” is consistent with our own views.

[Marketing]

(46) This finding lines up with the Wikstrim (2006) assumption that once an act of crime becomes a habit, deterring cues and messages have no effect on the decision of an offender to commit the act.

[Sociology]

Writers in the soft knowledge fields were also far more likely to use integral citation forms than science writers (22.3 vs 5.4 per 100 discourse and cognition stance nouns), a practice which makes the cited author more prominent by including his or her name in the body of the sentence rather than in parenthesis or a footnote. This pattern helps to construct a discursive and contextual framework for arguments in a way which enables authors to express an alignment with disciplinary factions and a recognizable stance towards issues. Integral citations are particularly prevalent in disciplines such as
sociology and philosophy which are typically reiterative and recursive in their construction of arguments. Knowledge production involves authors often “retracing others’ steps and revisiting previously explored features of a broad landscape” (Hyland, 1999, p. 353) so that ideas and statements are attributed to prominent disciplinary figures to so they can be discussed and analyzed anew, as in these examples:

(47) …this sort of causality is so far from accommodating itself to Hume's explanations that people who believe that Hume pretty well dealt with the topic of causality would entirely leave it out of their calculations. [Philosophy]

(48) At the same time, following Sartre's theory that ‘denial is indeed conscious’, Cohen (2001: 6) argues that to deny knowledge of an event is, in fact, to acknowledge awareness of it. [Sociology]

(49) Such duality is also evident in Marx's statement that a commodity' appears as the twofold thing it really is as soon as its value possesses its own particular form of manifestation. [Sociology]

In sum, writers often accompany their statements with a stance towards them using noun complement constructions. A key choice here is no only the choice of noun and its functional category, but also whether this stance should be averred as their own or attributed to others so that it can be discussed and picked over. Overall, we find a certain reluctance among these academic authors to baldly present a personal stance and there is a tendency for them to make their assertions implicitly or attribute them to others.
9. Conclusion

Academic writing is a dynamic form of textual interaction where writers make research claims, express a stance, and get their voice heard. Stance-taking is the means by which academics take ownership of their work; making epistemic and evaluative judgment regarding entities, attributes and the relations between material to persuade readers of their right to speak with authority and to establish their reputations. The *Noun Complement* construction is one instrument in their rhetorical toolbox for achieving this: a productive strategy to construct a stance through the choice of a head noun which can precisely define and characterize the proposition in the complement. We hope to have shown that the structure offers writers a powerful way of standing behind their arguments and claiming credit for their ideas.

Our study has sought to establish the frequency and importance of this construction and to show how different disciplines use it to frame intellectual styles, manage their definitions of the world and construct knowledge. The stance that writers take is a reflection of the modes of knowing and praxis of knowledge production in their particular disciplines. The humanities and social sciences depend far more on this way of expressing a stance than the hard fields because of their more discursive and explicitly interpretive style which builds knowledge on cognitive understanding and theoretical constructs. In the hard knowledge texts we are more likely to find stance nouns addressing events more often since empirical evidence is the primary mode of knowledge construction. Similarly, decisions to implicitly aver a stance or to attribute it to others is also an expression of an author’s proximity to his or her discipline, so that writers’ choices are not arbitrary, but reflect their assessment of readers’ needs and expectations as they construct arguments and negotiate potential objections.
which address a disciplinary community (Hyland, 2012).

The function-based classification of stance head nouns proposed in this paper not only helps reveal one way in which disciplinary differences are constructed and marked in discourse, but also contributes to the growing literature on stance in academic writing. Our analyses show that stance is not only a lexical feature of discourse, but is also very much a grammatical phenomenon too. This study of the Noun Complement construction uncovers one more way by which authors can evaluate the material they present and carve out a personal position and a distinctive stance from their colleagues. By foregrounding the writer’s attitude it is a powerful way of influencing how readers interpret and understand the information they convey.

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