Stance and voice in academic writing

The "noun + *that*" construction and disciplinary variation

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Stance and voice are two crucial elements of social interactions in academic writing. However, their conceptual constructs are elusive and their linguistic realisation is not fully explored. A relatively overlooked feature is the "noun + that" structure, where a stance head noun takes a nominal complement clause (as advantage that in Flow cytometry offers the advantage that long term is available). This construction allows a writer to express authorial stance towards complement content and attribute a voice to that stance through pre-modification. This paper examines this construction in a corpus of 60 journal articles across six disciplines extracted from the BNC corpus. Developing an expressive classification of stance nouns and the possible voice categorisation, this study shows that the structure is not only widely used to project stance and voice, but that it displays considerable variation in the way that it is used to build knowledge across different disciplines.

Keywords: stance, voice, academic writing, "noun + *that*" construction, argument

1. Introduction

Academic writing allows authors to present research findings, disseminate knowledge and gain visibility in the scholarly world. However, academic writing is not a dispassionate attempt to simply report neutral facts, because research findings and facts may not be self-evident enough to ensure that readers take the same perspective and concur with the conclusions proposed. They are "efficacious only if applied *persuasively*" (Prelli 1989: 100, emphasis in the original), dependent on the assumptions scientists bring to the problem and related to the ways that writers interact with readers (Gilbert & Mulkay 1984, Hyland 2004). This persuasive

endeavour relies on writers to take a stance on their material and make rhetorical decisions on how the proposition is voiced. Stance and voice, therefore, have attracted much attention in applied linguistics, especially from a constructivist view which sees academic writing as social interaction, saturated with the perspectives of the author (Fløttum et al. 2006, Hyland 2005b).

Understanding of stance and voice, however, is contingent and elusive, as shown in a recent collection that focuses on the topic (Hyland & Guinda 2012). Although Hyland & Guinda (2012:4) suggest that "stance is subsumed in the broader phenomenon of voice", the two constructs are taken as "a reversible flow of the communal into the personal" and examined through various linguistic features. Further, this conceptual ambiguity tends to render students and novice scholars less able to grasp how to express their opinions appropriately in academic writing (Hudson 2013, Petrić 2010). By taking the "noun + *that*" construction as a stance device, this study sets to explore how writers convey their positions through this construction and how they draw in various voices in the propositional presentation. Through this study I hope to enrich our knowledge about stance and voice by reformulating their conceptual relationships and the linguistic realisations in disciplinary writing.

2. Stance and voice in academic writing

Stance and voice are two of the central concepts in envisaging academic writing as social interactions. For Biber & Finegan (1989:93-94), 'stance' is the expression of a writer's value judgments and personal feelings, as regards "evidentiality and affect". 'Evidentiality' refers to the writer's value judgment on knowledge: "towards its reliability, the mode of knowing, and the adequacy of its linguistic expression" (Biber & Finegan 1989:93); 'affect' involves "the expression of a broad range of personal attitudes" (Biber & Finegan 1989:94). Stance is something of an inclusive term used to refer to the ways writers express their personal views and authoritativeness. Its linguistic means have been described in terms of 'hedges', 'reporting verbs', 'directives', 'metadiscourse', and so on (Fløttum et al. 2006; Hyland 2004, 2005a, 2005b; Swales 2004; Thompson & Ye 1991). But authors do not set up such positionings in a vacuum or from an unlimited 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. Thus any stance represents the writer's own individual position, but it also "reflect(s) the value system of that person and their community" (Thompson & Hunston 2000: 6).

On the other hand, writers have to make important decisions on the voice they give to the stance and position they take. For Ivanič & Camps (2001:6), 'voice' is

presented by the "agency in this process of subject-positioning". Authors modulate their voice to negotiate a convincing claim and credible ethos of their stance and knowledge by seeking solidarity with readers and acknowledging alternative views (Fløttum et al. 2006, Hyland 2008, Matsuda & Tardy 2007, Parkinson 2013). In other words, they manage the stancemaking agency or the source of propositions in texts (Bakhtin 1981) in the ways that their readers find familiar, plausible and persuasive. Although voice is taken as "expressivist manifestations" of individualism (Ramanathan & Atkinson 1999: 51), it is an impression which is ultimately ascertained by readers (Burgess & Ivanič 2010, Matsuda & Tardy 2007, Tardy & Matsuda 2009). This is all the more so "if it is transmitted through lexical stance" (Guinda & Hyland 2012: 4). The voice a writer gives to his or her stance on information and knowledge has to be balanced against the convictions and expections of readers, taking into account their likely objections, background knowledge and rhetorical expectations. An important decision is the one called 'personal manifestation' (Fløttum et al. 2006), referring to whether a stance is conveyed in the voice of the writer or attributed to others.

According to Sinclair (1986), all positions in a text are asserted by the writer (averred in the writer's voice) unless they are attributed by the writer to the voice of some other person or entity (attributions). Tadros (1993) shows there is a pragmatic choice between averral and attribution since it relates to how a writer persuades readers of his or her viewpoints. By comparing the frequencies and forms of "evaluative that" structures in research article abstracts from six disciplines, Hyland & Tse (2005) find out that the evaluations are made through the voice either of author and other humans, abstract entity, or concealed source. Similarly, Hunston (2000) and Charles (2006) source the voice of an evaluation either to self or others. When an evaluation is self-sourced, the author may choose the form of 'emphasized averral', by which the author stresses his or her overt possession, or 'hidden averral', by which the author obscures his or her presence. These studies have shown that the choice of voice (source) reflects the writer's scientific caution and deference to authority but also constitutes a shared culture and perspective of knowledge, which the reader is expected to be convinced by.

Stance and voice, therefore, point up the expression of writers' perspectives, authoritativeness, and authorial presence, which create the writers' discourse self' (the impression of themselves) and 'author self' (the source of opinions and authorial presence) in texts (Ivanič 1998). They also reveal the writers' consideration and assessment of readers' needs and expections as they formulate arguments and negotiate potential objections when addressing a disciplinary community. Any expression of academic stance and voice, therefore, projects both a writer's 'positioning' towards what is being addressed and his or her 'proximity' to the community addressed (Hyland 2012). Thus they are an individually created presentation of a

writer's judgment, authority and credibility, but community-influenced, susceptible to the epistemic perspectives and rhetorical practices of the writers' particular community regarding what counts as knowledge (Jiang & Hyland 2015, Bazerman 1988, Fløttum et al. 2006, Hyland 2004, 2008).

The "noun + *that*" structure is a less studied stance construction compared with other stance markers such as hedges, reporting verbs, metadiscourse, etc., although this pattern appears to be pervasive in academic texts. This construction allows writers to mark their stance on complement propositions by the choice of a head noun, and they may add the rhetorical option of personal manifestation, deciding whether the voice to the stance is averred by the writer or attributed to others. As we shall see, its disciplinary variation reveals the extent to which stance and voice are a response to community variation: how they express both the author's positioning and proximity to a discipline.

3. "Noun + that" construction

The "noun + *that*" construction is a grammatical structure in which a head noun takes a nominal complement in the form of *that* clause, which is quite common in academic prose (Biber et al. 1999). Consider Examples (1) and (2), both from my corpus:

- (1) My suggestion that some 'metaphors' in *The Inheritors* be treated as cases of underlexicalisation rather than metaphor, so splitting off underlexicalisation [...] [Social science]
- (2) But the report concluded that undue emphasis is placed on inquiries about research experience in the mistaken belief that it is easier to assess a candidate's research abilities. [Medicine]

As head nouns, *suggestion* and *belief* in these examples are vague in meaning. The interpretation of their connotative meanings is "context-bound: context will permit an exact interpretation to be put on any word" (Channell 1994: 6), although the denotative meanings are defined in dictionary entries. Thus they need to be and are lexicalised in a full and specific sense in the subsequent complement clauses (Winter 1982). *Suggestion* in Example (1) is unspecific because it is unclear what the *suggestion* is about or what is suggested. Thus to be cooperative (Grice 1975), the writer needs to provide full meaning for *suggestion* and does so through the proposition of the following complement clause *some 'metaphors' in The Inheritors be treated as cases of underlexicalisation rather than metaphor*. More importantly, however, the head nouns convey the writer's authorial perspective on the following

complement information, so they are also called 'stance nouns' 1 to "denote their expression of the writer's point of view towards the content specified in the complement clause" (Jiang & Hyland 2015: 531). Suggestion, for example, is chosen by the first writer in contrast to other semantic options such as opinion or assumption to show the writer's stance on this piece of information seeing it as a hedged verbal proposition rather than a definite cognitive belief. Similarly, belief in Example (2) expresses the writer's viewpoint towards the material information in the complement seeing it as a subjective understanding. Hence a writer chooses a particular stance noun among a range of alternatives available to express his or her perspective and judgment on the material information in the complement.

Stance nouns are very frequent in academic discourse (Jiang & Hyland 2015, Charles 2007, Coxhead 2000), so 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) 'signaling nouns' and for Schmid (2000) they are 'shell nouns'. As many of these names suggest, however, authors have principally been concerned with the discourse-organising 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). Nevertheless, the choice of head noun does more than simply connect and organise discourse, playing a key role in the rhetorical construction of a writer's stance. The writer in Example (3) chooses the word *advantage* to show his or her positive attitude that the reference content in the complement *the user is given a feeling of security by being concerned only with a limited range of immediate decisions* is beneficial.

(3) It has the *advantage* that the user is given a feeling of security by being concerned only with a limited range of immediate decisions. [Political law]

In addition, prior studies searched for these types of noun in corpora by either checking all lexical items (e.g. Flowerdew 2003, 2010) or relying on a limited list of items (e.g. Aktas & Cortes 2008, Nesi & Moreton 2012). In Flowerdew's (2003) study, he "list[s] all the different words occurring" in the lecture and textbook corpora he used, and then "all lexical items were concordanced" and "examined to establish if a given item functioned as a signalling noun" (Flowerdew 2003: 332). In another study on students' texts (Flowerdew 2010), he identifies each individual signalling noun in the corpora totally by hand. Obviously the methods are very time-consuming and are not applicable to a relatively large corpus. Aktas & Cortes

^{1.} The terms 'stance nouns' and 'head nouns' are interchangeably used in this study. Stance nouns are used with reference to stance expressions while head nouns refer to complement structure.

(2008) take a different approach, focusing on Hinkel's (2004) list of 35 "highly prevalent" abstract nouns, while Nesi & Moreton (2012) restrict their analysis to the most frequent nine nouns from Aktas & Cortes's (2008) study. However, such a limited list of nouns can hardly produce an exhaustive search of "noun + *that*" construction. Thus a more effective method is needed which is built on syntactic structure.

Furthermore, the "noun + that" construction thematises the writer's evaluation, making the attitudinal meaning the starting point of the message and the perspective from which the content of the that clause is interpreted (Hyland & Tse 2005). Thus advantage in Example (3) sets up a 'pragmatic presupposition' (Dryer 1996) which guides readers in processing the information in the complement. Under this influence, readers may be brought into alignment with the writer's stance and thereupon a common ground between them is established. Thus readers in Example (3) may assume with the writer that the user is given a feeling of security by being concerned only with a limited range of immediate decisions is advantageous. Thus solidarity between the writer and readers is created in this stance-making practice.

In addition, Halliday & Matthiessen (2014) note that the "noun + *that*" structure is an embedded postmodifying clause in which complement content "comes ready packaged in projected form" (Halliday & Matthiessen 2014: 536). Since "the core meaning of noun is a class of object", when action and event are encoded into a noun it takes on some of this "object-like status" (Halliday 1993a: 141), which makes it difficult for readers to challenge. As Halliday (1993b) remarks, "it is less negotiable, since you can argue with a clause but you can't argue with a nominal group" (Halliday 1993b: 43).

The "noun + that" clauses, furthermore, also afford writers the rhetorical chances to display various voices (Charles 2007, Parkinson 2013), particularly by adding pre-modification to stance nouns. The writer in Example (4) views the proposition individualism is fundamentally designed to sustain a conception of individuals as agents as a claim and assigns his or her own voice to this claim, taking overt ownership to the stance in the personal interpretation on the sociological issues. Conversely, the writer of the political law paper in Example (5) chooses decision to show his or her perspective on the complement information taking it as a personal judgement. He or she then attributes the agency of the decision to the housing authority, drawing in the voice of the government power rather than highlighting his or her own personal opinion. This authoratitive voice is important as to the juridical nature of this discipline which commonly derives argumentative force from legislative or authoratitive decisions.

(4) But this omission is a consequence of my *claim* that individualism is fundamentally designed to sustain a conception of individuals as agents.

[Social science]

(5) It was held that an applicant for accommodation who wished to challenge the housing authority's *decision* that he was intentionally homeless could do so either by action or by application for judicial review. [Political law]

In sum, the "noun + *that*" 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 and giving the floor to various voices. As we will see from this study, the stance and voice are contextualised in the perspectives and conventions of a particular discipline and, therefore, realise a set of epistemological assumptions and rhetorical practices shared with readers. I will first describe the method and classification scheme proposed, then go on to answer the following questions:

- i. What stance options are available to academic writers through choices of head nouns?
- ii. Do writers overtly aver this stance, attribute it to others or conceal its source?
- iii. To what extent do members of different disciplines differ in their choice of stance nouns and voice projection?

4. Corpus, categorisation and analysis

This study is built on 60 journal articles, totaling 640,000 words, extracted from the academic sub-section of the BNC corpus.² The journal articles cover six disciplines (humanities, social sciences, political law, medicine, technical engineering and natural science), which range from the hard physical sciences to the more discursive humanities and social sciences. Ten journal articles were randomly selected from each discipline. The texts were tagged for part of speech with CLAWS 5 tagset and then searched for "noun + *that*" clauses by regular expression using *AntConc* (Anthony 2014). Regular expression query, based on "a well-established, fairly standard and extremely powerful search syntax" (McEnery & Hardie 2011:255), enables a relatively effective extraction of a structural pattern. In line with this query, "\w*_NN\w\sthat_IN/that" was written for the search of the "noun + *that*" clauses.

^{2.} In BNCweb (http://bncweb.lancs.ac.uk/bncwebSignup/user/login.php), academic genres are selectable as subcorpora with a list of disciplines.

A manual reading of concordance lines was conducted to improve the identification of the "noun + *that*" clauses. I then created an expressive categorisation of stance nouns so as to observe what stance options these nouns provide. After numerous passes through the corpus, a categorisation was produced (see Table 1), as it was found that head nouns were functionally used either to mark entities, describe attributes of entities or discuss the relations between entities. I coded all the stance nouns according to this model, using *MAXQDAplus* (2012), a commercial qualitative data analysis tool.

Table 1. Expressive categorisation of stance nouns in the "noun + *that*" construction

Entity	Description	Examples
Object	concretizable metatext	report, proviso, note, study
Event	events, processes, states of affairs	change, process, evidence
Discourse	verbal propositions and speech acts	argument, claim, conclusion
Cognition	cognitive beliefs and attitudes	assumption, idea, belief, doubt
Attribute	Description	Examples
Quality	traits that are admired or criticized, valued or depreciated	advantage, difficulty, value
Manner	circumstances of actions and state of affairs	time, method, way, extent
Status	epistemic, deontic and dynamic modality	possibility, trend, choice, ability
Relation	Description	Examples
Cause-effect, difference, etc.	cause-effect, difference, relevance	reason, result, grounds

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*, *proviso*, *note* and *study* 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 *assumption*, *idea*, *belief* 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 criticised, 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*.

Finally in our categorisation, 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 *grounds*.

This function-based classification of head nouns therefore offers us a way to categorise the possible stances that writers take up in their texts, conveying their evidential judgment and affective attitudes towards the proposition that follows in the complement (Biber & Finegan 1989).

In order to observe the voice that writers give to the stance they make through the "noun + that" construction, a categorisation of voice source is proposed with respect to the pre-modification to the stance nouns in the construction. Hyland & Tse (2005) code 'human', 'concealed' or 'abstract' sources, equivalent to what Hunston (2000) and Charles (2006) call 'emphasized', 'averred' and 'hidden' voices. In considering the complexity of human sources to which the agency of a stance is attributed, Parkinson (2013) divides Hyland & Tse's (2005) human source into 'author' and 'other human'. Thus I drew on these prior studies in coding the voice source either as 'Overtly averred', 'Other human', 'Concealed' or 'Abstract entity'. Examples (6) to (9) illustrate each of them.

- i. Overt averred: first-person possessive forms;
 - (6) They will probably correctly object that this theory of mine seems to get things round the wrong way, and that even if we grant my *argument* that growth in the power of the state detracts from that of the individual's superego, there is every reason to suppose that [...] to describe it, later. [Political law]
- ii. Other human: third-person possessive forms or other people's presence in possessive forms;
 - (7) It has also been used by Givón (1979a) in his *argument* that, <u>in the development of a language</u>, sentential subjects are derived from 'grammaticalised topics'. [Humanities]

- iii. Concealed: avoid of any manifest possessive forms;
 - (8) There is now ample evidence to support the *suggestion* that relaxation processes can be active in polymer glasses at temperature well below Tg.

[Natural science]

- iv. Abstract entity: possessive forms of an entity or institution;
 - (9) The World Health Organisation's definition that health is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity redresses the medically biased emphasis on disease or infirmity.
 [Medicine]

5. Stance expressions through choice of head nouns

1,302 occurrences of the "noun + that" construction were identified in the corpus, which makes an average frequency of 22 cases in every article. Nouns indicating the writers' stance towards the existence of entities were the most common overall with Cognition group, describing beliefs or mental reasoning, the most frequent sub-category, comprising 35% of all stance nouns. Within the "Attribute" category, authors used stance nouns most often to make status judgements, commenting on the certainty or necessity of something, comprising 7.5% of all stance nouns. It is found that stance nouns referring to objects are used least of all. Table 2 summarises these counts.

Table 2. "noun + *that*" constructions across disciplines

Categories	Total no. of items	Items per 10,000 words	% of total stance nouns
Entity	970	15.2	74.5
Objects	25	0.4	1.9
Events	287	4.5	22.0
Discourse	207	3.2	15.9
Cognition	451	7.0	34.6
Attribute	250	3.9	19.2
Quality	71	1.1	5.5
Status	97	1.5	7.5
Manner	82	1.3	6.3
Relation	82	1.3	6.3
Totals	1,302	20.3	100.0

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. I will discuss these differences in more detail below in the rest of this section, but it is worth mentioning that the "noun + that" construction occurs more often in soft than hard fields, with 32.8 cases per 10,000 words in humanities, social sciences, and political law, and just 10.1 per 10,000 words in medicine, technical engineering and natural science (Log-Likelihood = 138.71, p < 0.001). In other words, some 89% of all stance nouns occur in the more discursive soft fields.

Table 3. "noun + *that*" construction frequencies across disciplines per 10, 000 words (% of total)

per 10,000	Human.	Social sci.	Pol. law	Med.	Tech. eng.	Natural sci.
(% of total)						
Entity	17.7 (77.1)	14.9 (77.1)	18.5 (70.6)	10.4 (81.3)	6.6 (66.7)	7.5 (72.3)
Objects	0.2 (1.0)	0.3 (1.5)	0.6 (2.4)	0.6 (4.7)	0.2 (2.0)	0.3 (3.2)
Events	4.5 (19.6)	4.5 (23.5)	4.9 (18.8)	4.5 (35.2)	3.5 (35.4)	3.9 (37.7)
Discourse	4.3 (18.8)	2.6 (13.6)	4.5 (17.2)	1.7 (13.3)	0.8 (8.1)	0.9 (8.9)
Cognition	8.6 (37.6)	7.4 (38.5)	8.4 (32.2)	3.6 (28.1)	2.1 (21.2)	2.3 (22.5)
Attribute	4.2 (18.3)	3.6 (18.4)	5.2 (19.9)	2.2 (17.2)	2.9 (29.3)	2.3 (22.7)
Quality	1.2 (5.4)	0.7 (3.5)	1.9 (7.4)	0.6 (4.7)	0.6 (6.1)	0.3 (3.2)
Status	1.8 (7.7)	1.3 (7.0)	1.8 (6.9)	1.1 (8.6)	1.2 (12.1)	1.1 (10.6)
Manner	1.2 (5.2)	1.5 (7.9)	1.5 (5.5)	0.5 (3.9)	1.1 (11.1)	0.9 (8.9)
Relation	1.1 (4.6)	0.9 (4.5)	2.5 (9.6)	0.2 (1.6)	0.4(4.0)	0.5 (5.0)
Totals	23.0 (100.0)	19.3 (100.0)	26.2 (100.0)	12.8 (100.0)	9.9 (100.0)	10.3 (100.0)

The most frequent occurrence of Status and Cognition groups and least use of Object group support Schmid's (2000) observation that the "noun + that" construction is an abstraction process and does not typically involve objectified entities such as report and paper. More frequent use of this construction in humanities and social sciences shows that writers in soft disciplines are more liable to step in texts and make interpretative comments when building their argument and knowledge than in hard ones. Furthermore, the frequent use of this construction is perhaps 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.

The data in Table 2 suggest 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 disciplines 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 material information unfolded in the complement propositions, but also suggest something of the epistemologies and ideals of knowledge construction in authors' disciplines.

Event and cognition, according to Chafe & Nichols (1986), are closely related to empiricism and interpretive rationality respectively, marking different modes of knowing and sources of knowledge in the disciplines. 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 is built far more on empirical evidence and the creation of facts through experimentation and observations (e.g. Jiang & Hyland 2015, Becher & Trowler 2001). Examples (10) to (13) below may give us a taste of the difference. In addition, the fact that scientists tend to use almost no discourse head nouns shows their epistemological preference in building arguments less on the textual or discursive artefact.

- (10) Both approaches prevented any understanding of the actual processes of local politics, and thus both helped to further the *orthodoxy* that local politics were largely absent in the immediate post-war period. [Political law]
- (11) Even so, there was broad *agreement* that this evidence of innovation and vibrancy was being achieved at the cost of institutional inertia, a reluctance to champion enterprise, and an avoidance of any deep-seated restoration of the national economy. [Humanities]
- (12) Our results thus provide the first direct *evidence* that tamoxifen does not have antioestrogenic effects on bone in postmenopausal women and indicate a possible oestrogenic effect. [Medicine]
- (13) Support for the correlation comes, for example, from the *observation* that white clouds cover and uncover blue and brown clouds. [Natural science]

The result in the "Attribute" category shows that authors in hard disciplines make less use of stance nouns to evaluate the attributes of entities they discuss than their peers in the soft fields (LL = 81.09, p < 0.001) and it implies that writers in hard domains tend to avoid their intrusion and personal evaluations in texts in order to strengthen the objectivity of their interpretations of the unmediated nature (Hyland 2002). In contrast, soft knowledge fields are more likely to build research claims and knowledge on personal interpretation and intellectual negotiation, which are open to writers' evaluation and judgement (Becher & Trowler 2001, Charles 2007, Hyland 2005a). The positions taken by these writers, for example, are very clearly foregrounded by their choice of stance noun as illustrated in Examples (14) to (16):

- (14) There is an accompanying *danger* that literature becomes absorbed by culture, and that literary values are superseded by cultural ones. [Humanities]
- (15) The first is the empirical *problem* that without formally testing memory in such circumstances it is impossible to know whether there really is a memory impairment in such circumstances and if so how complete it actually is.

[Social science]

(16) At the same time, however, we have to consider the *possibility* that members of society (consumers?) may not care about 'representativeness': setting up, say, a left-of-centre paper is a considerably simpler task than making people read it.

[Political law]

The distinctive stance taking preferences of writers in different disciplines can be also seen from the most preferred head nouns in each discipline. Table 4 shows the most frequently used head nouns of each category in each subject field.

Table 4.	The most	frequent head	d nouns of eacl	n category in	each discipline
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		Human.	Social sci.	Pol. law	Med.	Tech. eng.	Natural sci.
Entity	Objects	report	report	report	report	report	report
	Events	fact	fact	fact	evidence	fact	fact
	Discourse	claim	claim	conclusion	suggestion	guarantee	conclusion
	Cognition	view	view	view	hypothesis	assumption	assumption
Attribute	Quality	danger	danger	risk	advantage	advantage	advantage
	Status	possibility	possibility	possibility	possibility	probability	possibility
	Manner	extent	way	way	way	way	way
Relation		ground	ground	ground	ground	result	result

The most frequent cognition noun used by authors in soft disciplines is *view*, which expresses their personal opinion and observation on a subject. In contrast, hard scientists use *hypothesis* and *assumption* most often, which indicate something that has not yet been proved to be true and thus constitutes a basis for further experimentation and obervations. Such choices defer to the inductive disciplinary methodology and knowledge-making practices typically associated with the sciences. As their research enterprise and knowledge inquiry, scienctists normally work on testing hypothesis and model through the measurement of expriemental variables (Becher & Trowler 2001, Gilbert & Mulkay 1984). Examples (17) and (18) are typical in the corpus.

(17) Part of northern Lewis was ice-free during the last glaciation and the last Scottish ice-sheet did not extend beyond the Outer Hebrides, contrary to the widespread assumption that this ice-sheet extended to the edge of the continental shelf.

[Natural science]

(18) Our data therefore do not support the *hypothesis* that transferring to human insulin by itself alters the frequency or experience of hypoglycaemia.

[Medicine]

It is interesting to notice that when evaluating the qualities of the entities they discuss writers in hard and soft disciplines incline towards different attitudinal head nouns. Authors in the soft disciplines use such negative stance nouns as *danger* and *risk* most often, pointing out the pitfall and exigency in research territory or societal reality. This is important as regards the discursive nature of the lines of inquiry in soft knowledge fields. Unclear intellectual boundaries normally make the knowledge webs so loosely-knit that identifying a credible problem is the main way for writers in the soft disciplines to justify their work to readers (Becher & Trowler 2001, Hyland 2004). We can get a flavor of this rhetorical sleight of hand in the Examples (19) and (20) below.

- (19) There is a *danger* that a concentration on spatial manifestation masks the realities of social processes, that space itself is fetishised. [Humanities]
- (20) Moreover, the risk that conventional conflicts may get out of hand and degenerate into nuclear disaster is one with which mankind will have to live for ever, and it strengthens the argument for attempting to keep conflicts within some kinds of bounds. [Political law]

Authors in the hard disciplines, on the other hand, most frequently opt for *advantage*, when choosing a stance noun to comment on the qualities of the matters they address, particularly placing a premium on their own work and models. The engineer in Example (21) and natural scientist in Example (22) label the qualities of their own model and design as *advantage*, showing their respect for the cumulative nature of knowledge progression in their hard domains because new findings are generally accredited by adding to the developments of the existing state of knowledge (Becher & Trowler 2001, Gilbert & Mulkay 1984).

- (21) SYMAP has the *advantage* that no specialized hardware is required and is thus useful for introductory teaching at degree level. [Technical engineering]
- (22) The design has the *advantage* that both solvent and solution compartments are easily rinsed out and the cell does not have to be dismantled if contamination by permeation of low molar mass solute occurs. [Natural science]

When turning to the "Relation" category, difference arises again across the two realms of disciplinary knowledge. *Ground* most frequently appears in the work of humanitists and social scientists when they select a stance noun to construct relations between entities, while engineers and natural scientists prefer to establish the relations as *result*. Those options of stance nouns in relation type are probably

not casual choices neither but suggest different epistemology and practices across disciplines. In the soft fields, "the fabric of established understandings has a wider weave" (Hyland 2004: 32) in that knowledge problems are diffuse, non-linear and reiterative, ranging over wider academic and historical territory (Bazerman 1988, Becher & Trowler 2001). Thus claims and the warrants that support them rely on the novelty and plausibility of personal interpretation. Arguments, in other words, are necessarily explicitly interpretive and personal and so need to be carefully structured to provide clear causes and explanations (Jiang & Hyland 2015), like what the writers do in the following Examples (23) and (24).

- (23) They present short narratives of women's lives, and claim them for feminist therapy on the *grounds* that they emerge from women's personal experience.

 [Social science]
- (24) The United Kingdom and certain other member states contest that view on the ground that the E.E.C. Treaty and, in particular, articles 7, 52 and 221 thereof cannot be interpreted as depriving the member states of their competence under public international law with regard to the registration of ships. [Political law]

Hard knowledge, by contrast, is relatively constructed as a steady linear progression, where new claims are integrated into current knowledge, drawing on it as supporting testimony (Gilbert & Mulkay 1984, Hyland 2004). Thus the authors in Examples (25) and (26) situate their new work in the scaffolding of already accredited facts, by setting up the material in the *that* complement clause as established *results*.

(25) Numbers are also better suited to computer operations with the *result* that the process of searching the tree is made computationally simple.

[Technical engineering]

(26) The above transformation is also related to the well known *result* that, if Z is a solution of Ernst's equation (11.8), then another solution is given by (12.16) where b is a real constant. [Natural science]

In sum, by using the "noun + *that*" construction, writers construct different perspectives on issues which their colleagues and peers can readily recognise as plausible and persuasive, creating an appropriate and familiar stance to evaluate and define the content they present in the complement clause. I hope to have shown something of how stance nouns are used to represent 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, whether to attribute that stance to another source, or whether to conceal the voice to that stance 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 next section I will look briefly at the results of such decisions.

6. Voice projection through averal, attribution or concealment

The stance nouns were coded regarding whether they are overtly averred by the author, whether they are attributed to other human or abstract entity, or whether the source of the stance is concealed. While all assertions are, ultimately, averrals (Sinclair 1986, Tadros 1993), it was found that only 8.8% of the stance nouns were explicitly averred with first-person possessives (my or our). A further 25.6% were clearly attributed to other voices, with 18.1% to other human and 7.5% to abstract entity. Thus the remaining 65.6% of stances were voiced with no clear ownership but were implicit averrals. Table 5 shows the different voice given to the stance nouns across disciplines.

Table 5. Voice source of the stance nouns across disciplines (% of total)

	Human.	Social sci.	Pol. law	Med.	Tech. eng.	Natural sci.
Overt averred my	21 (6.8)	13 (3.5)	23 (4.7)	1 (1.4)	0 (0.0)	0 (0.0)
our	12 (3.9)	16 (4.4)	20 (4.1)	5 (7.0)	1 (4.2)	2 (4.3)
Other human	55 (17.9)	80 (21.8)	85 (17.4)	10 (14.1)	2 (8.3)	3 (6.5)
Concealed	195 (63.5)	235 (64.0)	316 (64.6)	52 (73.2)	20 (83.3)	40 (87.0)
Abstract entity	24 (7.8)	23 (6.3)	44 (9.2)	3 (4.2)	1 (4.2)	2 (4.3)

The majority of stances taken by nouns in these two groups are therefore expressed in a concealed form, with no overt voice of ownership. This is, of course, unsurprising given the established conventions of impersonality in academic writing which advises authors to minimise their presence and to cloak their subjective interpretations with persuasive objectivity. These uses can be particularly seen clearly in the work of hard scientists as they are urged to "strengthen the objectivity of their interpretations and subordinate their own voice to that of unmediated nature" (Hyland 2001: 216). Examples (27) to (29) are given below.

(27) The finding that untreated patients with severe hypocalcemia showed the highest <u>values of total and nephrogenous urinary cAMP</u> is in keeping with the notion that a secondary hyperparathyroidism may occur in active coeliac disease.

[Medicine]

- (28)The conjecture that the stress energy tensor is proportional to some curvature tensor leads to the selection for this role of a unique contraction of the Riemann tensor (Section 7.3) called the Einstein tensor. [Natural science]
- We give below an example, but must enter the *caveat* that because of its small (29)order (n = 3) it converges rapidly. [Technical engineering]

Writers in soft fields more often draw in other human's voice in the expression of their stance, particularly someone celebrated in the academic territory, as we can see from Examples (30) to (32) below. In the soft fields, "new knowledge follows altogether more reiterative and recursive routes as writers retrace others' steps and revisit previously explored features of a broad landscape" (Hyland 2004:31). Thus by drawing in the voice of prominent disciplinary figures, writers build intertextual connections with the literature, which often exhibits greater historical and topical dispersion. This voice attribution helps writers to construct a discursive and contextual framework for arguments and float their own belief while simultaneously anticipating readers' possible disagreement in a way which enables them to express an alignment with disciplinary factions and a recognizable stance towards issues.

- We can accept that science is based on induction and Hume's demonstration that induction cannot be justified by appeal to logic or experience, and conclude that science cannot be rationally justified. [Humanities]
- I believe that a formidable case can be made out in support of Lord Simon's conviction that "the concept of 'crime of basic intent' is a useful tool of analysis". [Political law]
- This is somewhat similar to Olson's (1982) argument that the rise and then decline of countries can be linked to their degree of pluralism, an argument which has found little substantial empirical support. [Social science]

Table 5 also indicates that writers give the floor to the voice of abstract entity such as institutions and authorities. This is perhaps related to different disciplinary practices, but given the small number of cases involved not much can be made of this argument. The following Examples (33) to (35) may give a sense of how authors make use of this voice option.

- (33) The most striking instance was the 1976 Soweto uprising which was sparked off by secondary school pupils' opposition to the authorities' insistence that they learn certain subjects in Afrikaans, viewed by most black people as the language of the oppressor. [Social science]
- It also appeared to contradict the SIB's acceptance that it was, to some degree at least, involved in the regulatory problems highlighted by the Robert Maxwell scandal. [Political law]

The judges declined to accept the Tobacco Institute of Australia's argument that the sentence was not intended as a statement of fact but as merely an expression of opinion or as the platform of an argument in a community wide debate. [Medicine]

In sum, writers always try to give voice to their stance in a way that their readers and disciplinary community find acceptable, legitimate and persuasive. Overall, as we have seen, there is a certain reluctance among these academic authors to baldly present a personal stance but they are more inclined to make their assertions implicitly or attribute them to other voices.

Conclusion 7.

Academic writing is a dynamic form of social interaction where writers make knowledge claims and express stance and voice, building solidarity with readers. By taking a stance, academics make epistemic and evaluative judgment regarding entities, attributes and the relations between material; they craft the voice to that stance to persuade readers of the authority and veracity of their claims. The "noun + that" construction affords writers rhetorical potentials to construct their stance through different choice of head nouns to characterise the material information in the complement clause and writers relate this stance-taking process to the readers' expectations by the voice they make through different possessive premodification to the head nouns.

With this study I have sought to establish the frequency and importance of this construction and to show how different disciplines use it to define the world, frame intellectual modes and construct knowledge. Soft knowledge fields depend far more on this rhetorical construction than hard ones for their need to build knowledge on cognitive understanding and theoretical argumentation. In the texts from hard sciences, events occur most frequently since empirical evidence is the primary mode of knowledge production in these hard sciences. Therefore, the stance that writers take up in texts is a reflection of the modes of knowing and praxis of knowledge construction in their particular disciplines. Similarly, decisions as to the expression of voice to the stance is a projection of authors' proximity to the disciplines they belong to, so that writers' choices are not arbitrary, but reflect their assessment of readers' ideals and expectations as they jointly construct arguments and manufacture disciplinary knowledge. This study furthers our understanding of how stance nouns are used in the textual interaction and knowledg production in other disciplinary domains (Jiang & Hyland 2015, Charles 2007).

As we have seen in this study, stance and voice in academic writing need to be modulated in the process of a writer's positioning and proximity to the disciplinary readership and community (Hyland 2012). Stance projects a writer-focused self-representation while voice expresses a relatively reader-oriented alignment. However, stance can be realised not merely in lexical forms but also in the lexicalgrammatical interface just as the "noun + that" construction shows. This study also proves the value of the BNC in disciplinary writing research since it is less exploited in the comparative studies across disciplines and genres. In addition, the functionbased classification of stance nouns proposed in this paper holds value for future studies on the rhetorical use of nouns in academic writing.

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