Diachronic corpus analysis of stance markers in research articles: The field of applied linguistics

Shirin Rezaei1, Davud Kuhi2* and Mahnaz Saeidi2

Abstract: Despite the continuously growing body of research on metadiscourse markers in different genres and through various perspectives for over 20 years, very little is known of how these features have evolved over time in response to the historically developing practices of academic communities. Motivated by such an ambition, the current research drew on a corpus of 4.3 million words taken from three leading journals of applied linguistics in order to trace the diachronic evolution of stance markers of research articles from 1996 to 2016. Hyland’s model of metadiscourse was adopted for the analysis of the selected corpus. The data were explored using concordance software AntConc. Moreover, a Chi-Square statistical measure was run to determine statistical significances. The analysis revealed a significant decline in the overall frequency of stance markers, with devices in all categories, except self-mention which increased dramatically over the past 20 years. The paper has been concluded by offering some suggestions for teaching academic writing.

Subjects: Language & Linguistics; Applied Linguistics; Corpus Linguistics; Discourse Analysis

Keywords: applied linguistics; diachronic; metadiscourse; stance

ABOUT THE AUTHORS

Shirin Rezaei is a PhD candidate in the Department of Languages, Tabriz Branch, Islamic Azad University, Tabriz, Iran. Her areas of specialization are Discourse analysis and EAP. She has been teaching English in different language institutes. This article has been extracted out of Ms. Rezaei’s PhD thesis, supervised by Dr. Kuhi.

Davud Kuhi is an assistant professor in TEFL and a faculty member at Islamic Azad University, Maragheh branch, Iran. He has his PhD in TEFL from Islamic Azad University, Tabriz Branch, Tabriz, Iran. His areas of specialization are Discourse analysis, sociolinguistics, EAP. He has published and presented a lot of papers in different international journals and conferences.

Mahnaz Saeidi is an associate professor in the Department of Languages Tabriz Branch, Islamic Azad University, Tabriz, Iran. Her areas of specialization are Academic writing, Teacher training, Critical thinking. She has also translated and published many articles and books.

PUBLIC INTEREST STATEMENT

In the present paper, we focused upon the historicity of genres and their constituting features like metadiscourse. We argued that any attempt to understand the true nature of academic genres should develop a historical perspective which sees genres as being interwoven with complexities and dynamicity of discourse communities’ social practices. The empirical evidence presented was an attempt to highlight such understanding that the chronological variations in academic genres can be accounted for socio-historical needs of their users. Subsequently, these contextual needs impose a pressure on the structure of academic genres which results in the growth of professional discourse community. One methodological option available for the researchers active in academic discourse analysis would be investigating the chronological variations seen in academic genres and highlighting how these variations are interwoven with the changing social practices of specific discourse communities.
1. Introduction
Genres are subject to change and evolve in response to changes in the needs of the discourse community (Devitt, 1993; Kress, 2010; Miller, 1984/1994; J. Swales, 2004). In fact, genres are not fixed and static; rather genres are seen as being interwoven with complexities and dynamicity of discourse communities’ social practices (Dudley-Evans, 1994). This conception of genre dynamicity is also supported by Berkenkotter and Huckin (1995) who presented a set of principles for genre based on a synthesis of a number of diverse theoretical orientations. As Hyland (2004, p. 173) argues, “genres are dynamic constructs closely linked to both individual purposes and wider social and cultural practices. These interactions suggest that changes at either level are likely to bring about changes in discourse practices”. According to Hyland (2004), essentially, there are three main sources of change: from users inside the discipline manipulating conventions; from peripheral members seeking to assert new practices; and from macro-level developments within the discipline or wider culture.

Amongst the academic genres, research article as the master narrative of our time is a dynamic textual institution which undergoes, like nearly all genres, continuous if slow evolution (Hyland, 2004; J. M. Swales, 1990; Salager-Meyer, 2001; J. Swales, 2004). From J. Swales (2004) point of view, four major contemporary trends have influenced research communications in various ways: generification, commodification, technology, and globalization. Generification manifests itself as the proliferation of genres to meet concrete administrative and academic requirements. It is characterized by a “trans-national interconnectedness” and “a tremendous affluence of information” (Blommaert, 2005, pp. 36,176) which creates new impulses, interests and possibilities. The term globalization highlights the process of hybridization (see Nederveen Pieterse, 1995) that occurs at multiple levels in globalized settings: the combination of discourses, genres and styles for definite social purposes.

Technological innovation makes it possible to articulate and develop new, hybrid genres. For example, the growing worldwide moves toward ETDs (electronic theses) introduce possibilities of color images, sound and video files, and external links long denied to the traditional text dissertation (Edminster & Maxley, 2002). Both increased globalization as well as advances in technology have contributed to the increasing standardization and commodification of scholarly genres (J. Swales, 2004). To the four agents of genre change detected by Swales, Guinda (2015, p. 76) added the tandem context/specialization. He argues that “hybridization is not possible without a favorable context, and sometimes it is the context itself that generates variation”.

If the genres are living and the RA is continually evolving, features constituting genres will also go through the same diachronic evolution process to meet the changing and evolving needs and expectations of the host discourse communities (see, for example, Ayers, 2008; Banks, 2008; Biber & Gray, 2011; Gillaerts, 2013; Hyland & Jiang, 2018b; Jiang & Wang, 2018). Amongst features constituting genres, metadiscourse resources have also gone through the same diachronic evolution process to fulfill new social and epistemological demands of discourse communities (e.g., Gillaerts & Van de Velde, 2010; Kuh & Dustsadigh, 2012; Gillaerts, 2014; Kuh & Mousavi, 2015; Hyland & Jiang, 2016a, 2016b, 2018a). These studies lend support to the view that there are connections between metadiscourse variation and the changes in social practices of discourse communities. However, it seems that “recent historical changes that have resulted in a gradual movement toward rhetorical convergence as discourse communities adjust their use of metadiscourse to changing circumstances have been largely unnoticed” (2016a, p. 19).

2. Literature review
The term metadiscourse was coined by the structural linguist Zelig Harris (1959) for the first time and later has been further developed by writers like Vande Kopple (1985) and Crismore (1989). Building on their work, Hyland (2005b, p. 37) argues that “metadiscourse is the cover term for the self-reflective expressions used to negotiate interactional meanings in a text”. Interaction is understood here as the writer’s intervention to anticipate the reader’s possible reactions, objections, and processing needs. It has two elements: (i) an interactive dimension which is used to
organize propositional information in ways that a projected target audience is likely to find coherent and convincing (ii) an interactional dimension which focuses on the participants of the interaction and seek to display the writer's persona and a tenor consistent with the norms of the disciplinary community (Hyland, 2005a). This study focused on interactional metadiscourse because these resources, by affording research article writers various means of marking their presence, negotiating knowledge claims, and engaging their readers, lie at the very core of academic communication as socio-rhetorical activity.

Different scholars have employed different terms to refer to different aspects of interaction in academic communication: attitude (Halliday, 1994), epistemic modality (Hyland, 1998a), appraisal (Martin, 2000; White, 2003), stance (Biber & Finegan, 1989; Hyland, 1999c), and metadiscourse (Crismore, 1989; Hyland & Tse, 2004). Despite the plethora of research, Hyland (2005b) model of interaction offers a comprehensive and integrated model for the interaction in academic argument. Hyland (2005b) maintains that interactions are accomplished in academic writing by making choices from the interpersonal systems of stance and engagements. More particularly, Hyland (2005b, p. 178) put forth an overall paradigm of stance specifically related to academic writing, which focused on “writer-oriented features of interaction and refers to the ways academics annotate their texts to comment on the possible accuracy or credibility of a claim, the extent they want to commit themselves to it, or the attitude they want to convey to an entity, a proposition, or the reader”.

From Hyland and Jiang (2016a) point of view, successful research writers construct texts by taking a novel point of view toward the issues they discuss while anticipating readers’ imagined reactions to those views. “This intersubjective positioning is encompassed by the term stance and, in various guises, has been a topic of interest to researchers of written communication and applied linguists for the past three decades” (Hyland & Jiang, 2016, p. 1). Stance is a consistent of rhetorical choices that allow authors to conduct interpersonal negotiations and balance claims for the significance, originality, and plausibility of their work against the convictions and expectations of their readers.

However, like other features of disciplinary discourses, it is not a static and unchanging marker of professional research writing. In fact, over time, taken-for-granted conventions of disciplinary discursive practices constantly shifting in response to changes in the dominant socio-cultural forces in society. This dynamic and unpredictable discursive practice may result in a feeling of uneasiness among those accustomed to teaching and learning fixed conventions of communication in academic English. Thus, as Hyland (2004) truly argues the main force driving the growing interest in academic discourse is the recognition that academic communication presents considerable difficulties for many students, especially as disciplines themselves change and develop. Students have to quickly come to terms with the literacy demands of the academy, and the characteristic and changing forms of disciplinary-specific communication, by learning to use language in new ways.

Despite this importance surprisingly the number of studies over diachronic perspective on these interactional elements seems to be relatively small in the existent literature. For example, on the basis of a quantitative corpus analysis of 72 abstracts, Gillaerts and Van de Velde (2010) found that the use of stance markers especially boosters and attitude markers has undergone remarkable changes in the course of the past 30 years. Authors argue that this fall may be related to a converging move of (applied) linguistics towards the hard sciences. For them, it is not totally clear whether this move “is a consequence of changing research practices, with a growing emphasis on empirical studies, or only a change in rhetorical practices” (p. 136).

In another study, Kuki and Dustsadigh (2012) findings showed considerable growth in the frequency of stance markers in the chemistry articles of native and Iranian journals during two decades. In the authors’ view, the changes in the socio-historical context impose pressure on the structure of academic genres and epistemological norms of science. In the same vein, Gillaerts (2014) found an overall increase of interactive metadiscourse coupled with a decrease in
interactional metadiscourse in 60 abstracts from applied linguistics journal published from 1987 to 2007. In the authors’ view, these findings support the idea that there is an increasing tendency in applied linguistics towards more statistics and description.

Finally, through the diachronic study of a corpus of 2.2 million words from articles in the top journals in four disciplines, Hyland and Jiang (2016a) found a significant decrease in stance markers between 1965 and 2015. Authors argued that the shift in academic conventions may indicate changes “in the nature of disciplines, the influence of external funders and commercial sponsors, and the ever-closer connection between professional recognition and career advancement in competitive publication marketplace” (Hyland & Jiang, 2016a, p. 19).

A specific strength of all the studies is that writers’ stance options are made not from an infinite range of alternatives but from a restricted subset of options that reveal how they understand their communities through the assumptions their stances encode in specific time (Hyland & Jiang, 2016a). In other words, stance choices are disciplinary practices as much as individual positions evolving over time. Following this tradition, drawing on a corpus of 4.3 million words taken from three leading journals of applied linguistics, we study whether, and to what extent, stance markers have changed over the past 20 years in response to the historically developing practices of applied linguistics field. More specifically, our study seeks to answer the following research questions:

1. Has the frequency of occurrence of stance markers changed in RAs published in three leading journals of applied linguistics (applied linguistics, English for specific purposes, modern language journal) between 1996 and 2016?
2. What are the RA authors’ preferences of the diachronic patterns in terms of the types of stance markers?

3. Methodology

3.1. Corpus

The corpus of this study consists of approximately 4,316,854 words to track changes in stance markers over time. Research articles taken from three leading journals in applied linguistic discipline (applied linguistics journal, English for specific purposes journal, Modern language journal) created three corpora at three periods over the past 20 years: 1996–2002, 2003–2009 and 2010–2016 as shown in Table 1. The different time spans were chosen to see if changes were more pronounced in the later or earlier period, although we were concerned with overall changes over the 20 years.

The disciplinary scope of the corpus was restricted to applied linguistics as defined by Wilkins (1999) and as mentioned in handbook chapters of applied linguistics (e.g., Davies & Elder, 2004; Kaplan, 2002; Schmitt, 2002). Having specified the discipline, in the next stage journals were selected on the basis of the three criteria set by Nwogu (1997): representativeness, reputation and accessibility. About 10 university lecturers in applied linguistics issues nominated eight journals based on the established tradition of selection and sampling in other metadiscourse studies—

| Table 1. Corpus size and composition |
|--------------------------------------|
| Journal | 96–2002 | 2003–2009 | 2009–2016 | Overall |
|---------|---------|-----------|-----------|---------|
| AL      | 266,567 | 131,482   | 1,145,420 | 1,543,469 |
| ESP     | 294,265 | 319,858   | 459,916   | 1,074,039 |
| MLJ     | 419,977 | 255,855   | 1,023,514 | 1,699,346 |
| Overall | 980,809 | 707,195   | 2,628,850 | 4,316,854 |
informant nomination—e.g., Harwood, 2005a, 2005b; Hyland, 1999a, 2001a, 2002a, 2002b, 2002e. But in terms of accessibility, only these three journals could be retrieved online over a span of 20 years. In terms of representativity and reputation, the three journals selected were all leading journals in applied linguistics, indexed in the SCI with an average impact factor (IF) of above 1.5.

4. Model of analysis
Hyland’s (2005b) model of metadiscourse was adopted for the analysis of our corpora. In this model, stance refers to the “writer-oriented features” of interaction and concerns the ways writers comment on the accuracy of a claim, the extent they show their commitment to it, or the attitude they want to express to a proposition or the reader (Hyland, 2005b). It includes hedges, boosters, attitude markers and self-mentions.

- Hedges are used to indicate writers’ decisions to withhold complete commitment to a proposition for example, might, perhaps, possible (Hyland, 2005b)
- Boosters are employed by the writers to express certainty and emphasize the force of propositions for example, in fact, definitely (Hyland, 2005b).
- Attitude markers indicate the writers’ affective and emotional, rather than epistemic, attitude to suggested propositions, conveying surprise, obligation, agreement, importance, and so on for example, unfortunately, I agree, surprisingly (Hyland, 2005b).
- Self-mentions signal authors’ explicit presence in the text I, we, our, my. (Hyland, 2005b)

5. Procedure
The compiled potentially productive search items (see appendix) taken from the appendix of Hyland (2005b) were manually examined and counted with rigorous consideration of the functional meaning, and converted to an electronic corpus using concordance software AntConc (Anthony, 2011). After reading and coding all the papers, the frequencies of metadiscourse items in each year were calculated (per 10,000 words). Chi-square test was then used to determine statistical significances.

6. Results and discussion
The following section presents the results of the overall frequency of stance markers within each year block.

7. The categorical diachronic distribution of stance markers in RAs
Figure 1 clearly indicates a significant decline in the overall frequency of stance markers ($\chi^2 = 12.55, p$-value = 0.001), with devices in all categories, except self-mention (+34%) which increased dramatically over the past 20 years. Boosters (~18%) and attitude markers (~16%) have shown the steepest decline over this period. Hedges also registered a substantial fall (~12%).

As it is mentioned, boosters (~18%) have shown the steepest decline over the last 20 years. The most common forms of boosters of RAs were show, find, demonstrate, think, and know. As we can

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**Figure 1. Distribution of stance markers (1996–2016).**
see in Figure 2, cognitive verbs such as think, and know have declined from the top from second-year block, while show and find remained the top choices within all year blocks, although their frequencies fell over time. Interestingly, the greater use of such empirically oriented boosters seems to represent a substantial shift from “a personal belief toward more empirical and data-supported commitments to claims” (Hyland & Jiang, 2016a, p. 11). According to Hyland (2008), writers in the soft fields work harder to establish the significance of their work against alternative interpretations by using boosters frequently in method and result sections. However, less frequent use of boosters in applied linguistic RAs can be seen as a way of minimizing the researcher’s role in interpreting data, evaluating claims, and appealing to readers which is one important aspect of the positivist-empirical epistemology typically found in the hard sciences (Hyland, 2005a). In fact, by giving prominence to procedures or data, writers allow the facts to more transparently speak for themselves when drawing inferences. For example:

1. However, the present studies find that the means and percentages were slightly higher in the delayed tests than.

2. Figure 2 to 4 show the number of target items in the companion and experimental groups which increased.

Attitude markers also registered a substantial fall (~16%), particularly as expressed by only, significant, important, even and main. The item only remained the top choice within all year blocks, although its frequencies fell over time. Significant was the second top priority of attitude markers, it followed by important, even, and finally main which came the last.

Interestingly, as you might notice in Figure 3, over the 20 years past, the most common items of attitude markers in our study only and significant were used broadly in different ways directing readers to the persuasive strength of data or methodological practices rather than emotion:
The results showed that there was indeed a significant correlation between these measures ($r = 0.60$, $p = 0.03$), indicating that in this group daily L1 use had a positive effect on GJT performance.

While a significant change occurred on subject wh-questions in 11th graders, a significant change on object wh-questions was observed only in the graduate group.

Furthermore, attitude markers were also utilized as instruments of self-promotion especially when they express the importance of propositions and research findings to highlight their contributions as being noteworthy and to establish strong community-based bonds with other colleagues.

(5) It is important to consider at this point the extent to which our method genuinely gets at the difficulties that metaphor presented to these students.

In the same vein, as one of the most common items of attitude markers, even, conveys an attitude enabling writers to present a positive evaluation” by focusing attention on the author’s assessment of the relative unexpectedness of something being the case, while implicitly drawing on shared knowledge to do so” (Hyland & Jiang, 2016, p. 13):

(6) Sparks et al. (2009) also demonstrated that low motivation and high anxiety may be related to low aptitude, even in the L1.

Overall, it might be argued that the dramatic decline in the use of attitude markers in applied linguistic RAs lend support to the view that authors in the soft sciences become more prudent in their expressions of attitude which possibly reflects authors desire “to moderate their personal stance to present research that can withstand the rigors of falsifiability” (Hyland & Jiang, 2016). Thus, the dramatic decline in the use of boosters and attitude markers may be a sign of growth of
scientism in applied linguistic practices. In fact, increasing scientism in the applied linguistics practices may indicate a movement from traditional knowledge construction practices toward “techno science knowledge-production” wherein the production of knowledge is connected to a socio-political mission (Becher & Trowler, 2001, p. 8).

As Figure 4 clearly shows, hedges registered a substantial fall (~12%) over this 20-year period. This fall in the use of hedges perhaps indicates “a more measured epistemic stance and a more circumspect approach to authorial intrusion than in the past” (Hyland & Jiang, 2018a, p. 27). May, Would, could, suggest, and indicate represented 63% of all hedges in applied linguistics in 1996–2002 period and 25% in 2010–16 period. May remain the most frequently used hedges within each year-block over time but its frequency per 10,000 words fell by almost more than 50% over the period, and the other modal hedges also declined. Would was the second top priority of hedges after may in 1996–2002 period and interestingly it disappeared from the top in second-and third-year blocks. Its decline in favor of other choices like suggest and indicate might imply a move from comparatively “involved” and “verbal” discourse to highly “informational” and “nominal” discourse which may also plausibly be related to an increasing scientism in the social sciences due to a hard science orientation in their dominant methods and approaches (e.g., Glynos & Howarth, 2007):

(7) However, wh questions, with four of five dialogues significant, suggest that the hearers interpreted the two contours differently.

(8) The overall pooled as well as individual results indicate a clear pattern of development.

Surprisingly, while we see an overall decline in the expression of hedges, boosters, and attitude markers over time, self-mention (+34%) has undergone the greatest changes of all stance categories, increasing dramatically over the past 20 years. Overall, it appears that, over time, while applied linguists are becoming increasingly “present” in terms of self-mentions, they are expressing attitude and evidentially less frequently. This probably shows that self-promotion and academic recognition are an inherent quality of all academic texts—regardless of the genre they are producing—which may be overtly manifested in the form of self-mentions (Kuhi & Behnam, 2011). In fact, in modern academy, the academic writer’s desire for promotion can be studied from an institutional perspective of producing symbolic capital (see Bourdieu, 1991; Fairclough, 2002; Putnam, 2009), which may plausibly be an evidence for the emergence of commodified discourse due to the dramatic changes in the nature of professionalism. (Kuhi, 2014). For example:

(9) We did not consider these to be of further merest to our research question

Moreover, as you might notice in Figure 5, there was a similarity within all year-blocks in placing we and our as the first and second top priorities among the self-mentions. As Hyland and Jiang (2016a) state, career pressures toward collaborative writing and co-authorship might be one reason for increasing the proportion of multi-authored articles in applied linguistics.

8. Conclusion and implications

In this study, we have tracked how authorial stance has changed in research articles published in three leading journals of applied linguistics (applied linguistics, English for specific purposes, modern language journal) between 1996 and 2016. Using Hyland’s (2005b) model and looking at the articles from leading journals of applied linguistics discipline, we are witnessing writers’ less use of these explicit markers than in the past. It appears, from the point of view of authorial stance particularly manifested in the significant decline of attitude markers, boosters, and hedges, we are witnessing slow changes in traditional knowledge construction practices in applied linguistic discipline. It appears that these changes indicate a radical shift of academic practices from relative insularity to relative responsiveness to societal and global pressures (Trowler, 2014). It is
interesting to note that these findings are broadly consistent with those of Gillaerts and Van de Velde (2010), Gillaerts (2014), Hyland and Jiang (2016a), and Hyland & Jiang (2016b), 2018a.

Moreover, we have uncovered a somewhat surprising picture, finding that while we see an overall decline in the expression of hedges, boosters, and attitude markers over time, self-mentions have undergone the greatest changes of all stance categories, increasing dramatically over the past 20 years. This cannot be unrelated to the development of a promotional and consumer-oriented discourse which may be related to the emergence of commodified discourse due to dramatic change in the nature of professionalism.

Based on our findings, this study has a number of implications for teaching academic writing. First, it is clear that academic literacy is unlikely to be achieved through an orientation to some general academic conventions and practices. Writing cannot be understood solely in terms of either immediate situations of writing or from individual texts; rather, it reflects, and in turn constitutes, social and institutional practices derived from contexts which are constitutively changing. However, the potential difficulties this rhetorical change create for students and novice writers, particularly those writing in a second language (“Hyland & Jiang, 2016a, p. 49) can result in writers’ considerable trouble in using metadiscourse devices. Consequently, this will lead to the failure of representing self or one’s idea in the way that one intends and writing can seem uncontextualized and inappropriate (Hyland, 2005a). Thus, second related implication is that training in academic writing becomes a process of raising students’ consciousness of the choices they can make and the consequences of making those choices in particular contexts.

Since in our study, the evolving nature of stance markers has been attested only in RAs, there is an opportunity to extend this study into academic genres to find their probable evolutionary variations. Moreover, in this study, the researchers focused on RA in applied linguistics field. A similar procedure may be replicated with RAs on other similarly disregarded subjects in order to discover the evolutionary variations of those disciplines. Regarding the writers, the selected articles belonged to writers with different backgrounds, that is, the possible effect of the different cultures on the writing practice of writers has been overlooked. Thus, there is much room for concentrating on how the social nature of academic communication is influenced by cultural factors over time. In fact, in order to generalize the findings of this study, a larger corpus covering various disciplines and cultures is needed.

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**Author details**
Shirin Rezaei1
Davoud Kuh1
E-mail: Davoudkuhi@yahoo.com
Mahnaz Saeidi2
1 (Phd Candidate), English Language Department, Tabriz Branch, Islamic Azad University, Tabriz, Iran. 09931973917
2 (Phd), English Language Department, Maragheh Branch, Islamic Azad University, Maragheh, Iran. 09143144339

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Appendix. Stance Features

Attitude Markers
admittedly; agree; agrees; agreed; amazed; amazing; amazingly; appropriate; appropriately; astonishing; astonishingly; best; better; complex; comprehensive; conclusively; consistent; correctly; critical; curious; curiously; desirable; desirably; difficult; disappointed; disappointing; disappointingly; disagree; disagreed; disagrees; dramatic; dramatically; essential; essentially; even; expected; expectedly; fortunate; fortunately; hopeful; hopefully; important; importantly; inappropriately; interesting; interestingly; key; main; major; meaningful; necessary; only; prefer; preferably; preferably; preferred; remarkable; remarkably; robust; shocked; shocking; shockingly; significant; striking; strikingly; surprised; surprisingly; unbelievable; unbelievably; understandable; understandably; unexpected; unexpectedly; unfortunate; unfortunately; unique; useful; unusual; unusually; usual; valuable.

Boosters
actually; always; believe; believed; believes; beyond doubt; certain; certainly; clear; clearly; conclude; conclusively; decidedly; definite; definitely; demonstrate; demonstrated; demonstrates; determine; doubtless; emphasize; establish; established; evident; evidently; find; finds; found; in fact; hold; incontestable; incontestably; incontrovertible; incontrovertibly; indeed; indisputable; indisputably; know; known; must; never; no doubt; obvious; obviously; of course; primarily; prove; proved; proves; realize; realized; realizes; really; revealed; show; showed; shown; shows; sure; surely; think; thinks; thought; truly; true; undeniable; undeniably; underscore; undisputedly; undoubtedly; without doubt.

Hedges
about; almost; apparent; apparently; appear; appeared; appears; approximately; argue; argued; argues; around; assume; assumption; assumed; broadly; certain amount; certain extent; certain level; claim; claimed; claims; common; could; couldn’t; doubt; doubtful; essentially; estimate; estimated; fairly; feel; feels; felt; frequently; from my perspective; from our perspective; from this perspective; generally; guess; hypothesis; hypothesized; indicate; indicated; indicates; in general; in most cases; in most instances; in my opinion; in my view; in this view; in our opinion; in our judgment; in our view; largely; likely; mainly; may; maybe; might; mostly; notion; often; on the whole; ought; partly; perhaps; plausible; plausibly; possible; possibly; postulate; postulated; postulates; presuppose; presuppose; presumably; probably; probably; proposed; quite; rather; relatively; roughly; seems; should; sometimes; somewhat; suggest; suggested; suggests; suppose; supposed; supposes; suspect; suspects; tend to; tended to; tends to; tentatively; to my knowledge; typical; typically; uncertain; uncertainly; unclear; unclearly; unlikely; usually; virtually; view; would; wouldn’t.

Self-mentions
I; we; our; us; me; my
