

Two Sides of the Same Coin? Exploring Persuasive Discursive Practices in Academic and Popularized Texts in Psychology

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Abstract: Circulation of scientific discoveries occurs in various discourse communities. Adopting an audience-oriented view of writing (Hyland, 2010) and drawing on the appraisal theory (Martin & White, 2005), the current study aimed to explore the evaluative strategies psychologists would use to share their specialist knowledge with scholarly and non-scholarly readers. To this end, a corpus of 38 academic research articles and 38 popularized science articles from the archive of an English international refereed journal, *Current Psychology*, and two English popularized magazines, *Newsweek* and *New Scientist*, were analyzed in terms of attitude resources of appraisal, namely *appreciation*, *affect*, and *judgment*. The results of the study revealed that palpable degrees of persuasion were achieved through including certain attitude elements in both corpora despite no statistically significant difference. The results debunked the myth of objectivity in academic discourse and disclosed the psychology experts' appealing to persuasive tools for convincing the specialist and non-specialists of the truth value of their research outcomes. The findings carry pedagogical implications for English for the students of psychology courses. Indeed, future psychologists need to get familiar with the common discursive strategies to address their intended audience in academic and non-academic settings.

Keywords: Academic Research Articles, Popularized Science Articles, Science Popularization, the Appraisal Theory, Attitude Resources.

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Introduction

People have been growingly bombarded by a huge bulk of knowledge within the past decades (Miller, 1998). This massive exposure to scientific and technological information is taken place to individuals across various contexts. In this sense, scientists report their research findings in the form of academic papers (Russell, 2010) to be embraced by the professionals in their scientific communities or translate and transform them into non-scholarly, more comprehensible accounts for the public (Ren & Zhai, 2010).

Scientists are eager to generate, maintain, and grow the public's interest in recent scientific findings (Ben-Ari, 1999) and attract a wider audience for their ideas and discoveries (Ren & Zhai, 2010). This zeal for sharing their contributions to the public scientific literacy has recently given rise to the popularization of science (Bucchi, 2013), where the research outcomes are reformulated as “a social construct” (Hyland, 2010, p. 118) and pledged by different groups of audience.

Academic research articles and popularized texts approach their audience differently (Bowler, 2009). Circulation of scientific findings occurs in various communities through taking advantage of specific sets of linguistic resources (Martin, 1992). All in all, the authors are perforce required to both inform and persuade their readers of the truth value of their claims and evidence (Harris, 1959). Hence, serving the needs of scholarly and non-scholarly audience necessitates appealing to the evaluative resources which disclose the interpersonal meanings embedded in various text types and is represented in the Appraisal Theory (White, 2014).

Drawing on the notion of “recipient design” (Sacks, Schegloff, & Jefferson, 1974, p. 272) and proximity as “a reader-oriented view of writing” (Hyland, 2010, p. 117), the current study aimed to reveal how the scientific discoveries in the field of psychology were linguistically programmed and presented through using evaluative resources of the Appraisal Theory in English academic research articles and popularized texts which are intended for two groups of professional and unprofessional audience. The texts in psychology were considered as a worthwhile area geared to the needs and interests of both professional and popularized community members (Lievrouw, 1990). Bearing this in mind, the study strove to compare the frequency of attitude resources of the appraisal theory between academic research articles and popularized science articles in the field of psychology through answering the following questions:

- What are the frequent attitude resources of the appraisal theory in English academic research articles in the field of psychology?

- What are the frequent attitude resources of the appraisal theory in English popularized science articles in the field of psychology?
- Is there any significant difference between English academic research articles and English popularized science articles in the field of psychology in terms of attitude resources of the appraisal theory?

The students of psychology, who study English in an EFL context (e.g. Iran), need to be informed of the peculiar linguistic features they may employ to address their audience at the international level. Getting familiar with these rhetorical norms empowers them to make efficient use of the language to reach their designated professional and non-professional audience. Indeed, this expedites their socialization in their own discourse community.

Literature Review

Science Popularization

The dissemination of information about the tremendous advances in science and technology has reshaped the boundaries between scientists and society members and expedited the popularization of science (Ren & Zhai, 2010). The major strides made by the newspapers, magazines, and broadcasting services have widened the scope of science communication and evoked the public's interest in gaining scientific literacy.

Science popularization stimulates the non-restricted circulation of scientific findings in everyday discourse (Giannoni, 2008). However, simplifying the research findings originating from the academic communities in the accessible format to the public requires appealing to a set of discursive tools (Russell, 2010). The scientists need to make a dramatic shift between the professional and non-professional discourses (Giannoni, 2008) and painstakingly reconstruct the scientific discoveries in a comprehensible account.

Due to its decisive role in heightening the public awareness of the latest scientific findings, research in the field of popularization has received rapt attention. In an early study, Nwogu (1991) analyzed the journalistic version of academic articles relying on Swales' (1981) model of genre analysis. Focusing on a corpus of the popularized science texts in *The New Scientist*, *Newsweek*, *The Times* revealed that they mostly included such information as stating the problem, elaborating on the limitations of previous endeavors to solve it, presenting the positive outcomes and methods of conducting the study, discussing the major findings, and explaining the practical implications. Later, Miller (1998) compared the academic and popularized texts with regard to the application of visual elements and showed that pictures

served both informative and persuasive roles in academic genres while they were employed to decorate the popularized discourse. In another study, Varttala (1999) examined the academic research articles and popularized science articles on medical sciences in terms of the hedging devices and found out that science popularization employed these resources to provide a clear account of the scientific findings to the non-scholarly audience.

Furthermore, Hyland (2010) argued that non-specialist audiences were given a comprehensible version of the scientific findings by the scientists who consider “the rhetorical construction of proximity” (p. 117). He asserted that proximity evoked “an audience sensitivity” and allowed the scientists to gear their research to the “readers’ goals, interests, knowledge” (p. 126). In addition, Babaii, Atai, and Saidi (2017) examined the appraisal resources in popularized science texts of nutrition and demonstrated that the authors made the most use of the attitude markers. They also found out the high occurrence of appreciation, force, and heteroglossic resources in their corpus. In a recent study, Ngan and Lan (2020) examined two news story genres in light of the evaluative resources and found out that interpersonality was represented by negativity and quantification. These studies all touched upon the peculiarities of the popularized genres. However, the close overview of the literature signifies a gap regarding the differences of the academic and popularized discourse in terms of the evaluative devices.

Appraisal Framework

The appraisal theory underlies the concept of evaluation which refers to “a broad cover term for the expression of the writers’ attitude or stance towards, viewpoint on, or feeling about entities or propositions that he or she is talking about” (Hunston & Thompson, 2000, p. 5). It encompasses three broad categories, namely Attitude, Engagement, and Graduation. Attitude entails “our feelings, including emotional reactions, judgments of behavior, and evaluation of things”, while Engagement refers to the “sourcing attitudes and the play of voice around opinions in discourse”, and Graduation is concerned with “grading phenomena whereby feelings are amplified and categories blended” (Martin & White, 2005, p. 35).

Attitude allows the writers to express their emotional reactions (i.e. *affect*), attitudinal stances towards others’ behavior (i.e. *judgment*), and “evaluation of semiotic and natural phenomena” (i.e. *appreciation*) (Martin & White, 2005, p. 43). These subcategories of attitude provide the required resources for inserting the authors’ frames of mind into the text (White, 1998).

Engagement is manifested in “negotiating heteroglossic diversity (e.g. *perhaps, it seems, however, etc.*)” (White, 1998, p. 75) and entails resources “for negotiating various convergent alternatives, and counter socio-semiotic realities or positions activated and referenced by every utterance” (p. 78) (i.e. *heteroglossic* utterances) and/or leaving no space for other perspectives (i.e. *monoglossic* utterances) (Martin & White, 2005).

Graduation encompasses resources for “scaling interpersonal force for the sharpening/blurring the focus of value relationships (e.g. *very, really, somewhat*)” (White, 1998, p. 75). It has two subcategories entailing grading in terms of “intensity or amount” (i.e. *force*) and “prototypicality and the preciseness by which category boundaries are drawn” (i.e. *focus*) (Martin & White, 2005, p. 137).

The appraisal theory has provided the theoretical basis for a wide range of studies. Hyland and Tse (2004) investigated the frequency and function of evaluative *that* in 456 abstracts and revealed its role in managing the flow of information in this genre. Tutin (2010) compared the texts across various genres, namely research articles, theses, and course books in humanities and social sciences, and demonstrated the absence of subjective evaluation in these genres. Contrarily, Babaii (2011) revealed the use of personal comments, mockery, sarcasm, unhedged and blunt criticism in a corpus of book reviews published in refereed journals of physics.

In another study, Naghizadeh and Afzali (2018) compared the Iranian local and international research articles in terms of the engagement markers in the literature review section and found the prevalence of heteroglossic resources in the international corpus and the frequency of monoglossic markers in the local one. Similarly, Fitriati and Solihah (2019) analyzed the introduction sections of research articles written by Indonesian and Chinese researchers and showed the high occurrence of appreciation, heterogloss, and force in both corpora. More recently, Saidi (2021) investigated the English and Persian academic research articles of Nutrition in terms of the frequency of appraisal resources and revealed the prevalence of attitude resources more than the other two major categories of evaluative devices. However, she found no significant differences between the two sets of articles considering the attitude, graduation, and engagement categories of appraisal.

Notwithstanding the extensive literature on the use of appraisal resources across different genres, there seems to exist a noticeable gap considering the function and frequency of these rhetorical devices in various genres underlying different communicative acts which address the audience with distinctive backgrounds (Hyland, 2010). Comparing the academic and

popularized research articles would demystify the evaluative specificities of these texts which address the scholarly and non-scholarly audiences.

Methodology

Design and Corpus

The study adopted a conversion design, which is one of the mixed-methods designs. In conversion design, the qualitative data are analyzed and transformed into numerical values for running statistical analysis (Ary, Jacobs, & Sorensen, 2010). In this design, “qualitative data might be quantitized by counting” (p. 564).

The corpus of the study comprised 76 English articles encompassing 38 academic research articles (Appendix A) and 38 popularized science articles (Appendix B) containing a total of 118,076 words (72,644 words in the academic corpus and 45,432 words in the popularized corpus). Two associate professors of psychology who were active researchers in the field were asked to introduce the leading journals in psychology. They both included *Current Psychology* in their lists. They confirmed that this journal publishes academic scholarly research articles which can be considered as the representation of academic discourse. Accordingly, the academic research articles were collected from the archive of an international peer-reviewed journal, *Current Psychology*. It is published by Springer Nature and enjoys a five-year impact factor of 3.544. The journal allows the experts to share their theoretical and empirical research findings with the professional community members. The popularized articles, on the other hand, were gathered from the archive of two popularized sources, namely *Newsweek* (9 articles) and *New Scientist* (29 articles). *Newsweek* is an American weekly news magazine that allows the distribution of recent scientific findings to non-scholarly audiences. *New Scientist* is a British weekly magazine that provides the public with access to the latest research findings in all areas of science and technology. These two sources were suggested by the same experts who rated the academic journals. From the archive of both academic and popular sources, only those articles whose titles were related to psychological concepts were included in the corpus. The final corpus was also checked by the experts.

To avoid the possible impact of time of publication (Miller, 1998), only the academic and popularized articles published between 2020-2021 were chosen. Since the academic journal is a highly refereed journal in the field, the articles were regarded as being precisely evaluated under the rubrics of academic English conventions (Mur-Duenas, 2011). The two

popularized sources are also widely distributed and have highly qualified editorial board members. These factors seem to vouch for the proper and constant supervision over the quality of the published papers (Fahnestock, 1998). Hence, the authors of the articles were not necessarily native speakers.

Following the existing literature, the entire text of the popularized science articles and the “Results” and “Discussion” sections of the academic papers were included in the corpus. Fahnestock (1998) argued that the results and discussion parts of academic research articles accurately represent the outcomes of a scientific project and present what the scholarly audience sought in an academic contribution to the field. Indeed, these two sections are heavily laden with the authors’ endeavors to convince their audience of the novelty and fidelity of their discoveries (Saidi, 2021).

Data Collection Procedures

The archive of the *Current Psychology*, *Newsweek*, and *New Scientist* was checked and the articles published between 2020-2021 were downloaded. The academic research articles with empirical approaches were kept and those which were either review articles of a merely theoretical account of psychological concepts were removed. Similarly, the popularized articles with at least a psychological concept in their titles were included and the rest were considered as irrelevant, and thereby, removed from the corpus. The list of the articles (including 40 academic research articles and 38 popularized articles) was sent to the two experts. All 38 popularized articles were confirmed. However, two academic research articles were excluded since their focus was on validating a questionnaire and their scope did not match that of the study due to being a psychometric analysis rather than an exploration of a topic. Following the existing literature (Fahnestock, 1998), the “Results” and “Discussion” sections of the academic papers and the entire text of the popularized articles were prepared for analysis.

Data Analysis

The articles in the academic and popularized corpora were coded in terms of the three subcategories of attitude resources. The clauses were considered as the unit of analysis (Babaii, 2011). The whole text of the popularized texts and the “Results” and “Discussion” sections of the academic research articles were analyzed by the researchers. Another coder, an MA graduate of applied linguistics who was familiar with the analytical framework of the study, also coded the articles and inter-coder reliability was calculated ($r=0.95$). Then, the raw

frequencies were counted and normalized to 1000 words in order to make the texts with various lengths comparable (Biber, Conrad, & Reppen, 1998). To do so, each raw frequency was divided by the total number of words in the corpus and was multiplied by 1000 (i.e. the basis for normalization) (Aktas & Cortes, 2008). Following that, a Chi-square test was conducted to explore if there were any significant differences between the English academic research articles and popularized science articles in the field of psychology with regard to the frequency of attitude resources of the appraisal theory.

Analytical Framework

The appraisal theory serves as the comprehensive functional model of interpersonality (Lee, 2006) and allows for “exploring, describing, and explaining the way language is used to evaluate, to adopt a stance, to construct textual personas, and to manage interpersonal positioning and relationships” (White, 2014, p. 1). It entails three major categories, namely Attitude, Engagement, and Graduation (Martin & White, 2005).

Attitude resources enable the authors to express their emotional reactions (*affect*), feelings towards entities (*appreciation*), and evaluation of behaviors (*judgment*). Engagement resources empower the authors to provide a multitude of stances (*heterogloss*) and/or leave no space for other available options (*monogloss*). Graduation resources provide the required tools to present a graded account of the attitudinal stances (*force* and *focus*). The study focused on the attitude subcategories which divulge the writers’ intentions to present their personal stances and subjectivity while establishing the textual relationship with the audience of different degrees of expertise in psychology. Some examples for the subcategories of attitude resources are given in the following sections to illuminate the analysis procedures.

One example of each subcategory of Attitude resources for the current corpus is provided to clarify the data analysis procedure. In the following sentence, the author attributed a quality (i.e. being audacious) to a product (i.e. claim). This is how *appreciation* works in the text.

- This may seem an *audacious* claim, but (New Scientist, 2021)

Using adjectives and expressing the authors’ feelings and personal stances towards the entities leads to the formation of appreciation in a sentence. More examples of this type of Attitude resources include good, useful, poor, extraordinary, interesting when they are attributed to entities in order to present the authors’ personal dispositions towards a product, process, or entity.

The second subcategory of Attitude resources, affect, is represented by inserting feelings towards human agents. In the following example, the young people were described as being vigilant. Hence, the authors make use of these resources when they describe human feelings and take a personal approach towards human characteristics.

- *Young* Chinese seem to remain **vigilant** (*Current Psychology*, 2021)

In the third subcategory, the authors directly present their own evaluation of phenomena, people, thoughts, and characteristics. In the following example, the author evaluated ones' ideas positively.

- They are all **right**. (*New Scientist*, 2021)

These kinds of comments provided by the authors in a text lead to cases of judgment. Through judgment, authors allow themselves to judge others' behaviors and ideas. This subcategory might be considered as entailing the most personal, assertive, and direct attitudinal stances.

Results

The first and second research questions addressed the frequency of attitude resources of the appraisal theory in English academic and popularized science articles of psychology which concerned coding *affect*, *appreciation*, and *judgment* was explored in the study. Table 1 displays how attitude resources were distributed in the two corpora in terms of raw and normalized frequency values.

Table 1. *The Frequency of Attitude Resources in English Academic and Popularized Science Articles of Psychology*

Appraisal Resources	Total Frequency		Normalized Frequency	
	Academic	Popularized	Academic	Popularized
<i>Affect</i>	118	192	0.9993	1.626
<i>appreciation</i>	734	1020	6.216	8.638
<i>judgment</i>	0	2	0	0.0169
Total	852	1214	7.2153	1028.9

Moreover, to answer the third research question which aimed to explore the possible noticeable differences between the two corpora in terms of the attitude resources, a chi-square test was run. Table 2 illustrates the results.

Table 2. *Chi-Square Test for Attitude Resources across Academic Research Articles and English Popularized Science of Psychology*

	Value	Df	Sig.
English academic research articles vs. popularized science articles	1.483	2	0.476

The results revealed no significant difference between the academic research articles and popularized science texts in psychology considering the prevalence of *appreciation*, *affect*, and *judgment* resources (Sig.= 0.476, $p \leq 0.05$). As Table 2 illustrates, the experts in psychology made use of attitude resources in addressing both professional community members and the public.

The results demonstrated that the authors of both genres were inclined to employ attitude resources and ingrain their personal stances in the texts. In this sense, 852 attitude resources were coded in the academic corpus while 1214 ones were identified in the popularized articles.

Among the attitude markers, both groups of the articles included a large number of *appreciation* resources. Out of 852 identified attitude resources in the academic corpus, 734 (%86.15) were *appreciation* resources. Likewise, out of the 1214 attitude markers in the popularized corpus, 1020 (%84.01) were *appreciation* markers.

Academic Research Article Examples

1) Both clustering variables were very **good** predictors of cluster membership ...

(*Current Psychology*, 2021)

2) ... maintaining a **strong** moral self can be considered **useful** in interpersonal ...

(*Current Psychology*, 2021)

Popularized Science Articles Examples

3) whether they experienced **poor** mental health days

(*New Scientist*, 2021)

4) problems that are going **unrecognized** or **unacknowledged**.

(*New Scientist*, 2021)

In the above examples, the authors employed specific terms to reinforce their positive or negative attitudes towards the products (Example 1), processes (Examples 2, 3), and entities (Examples 2, 4). They kept less conservative stances towards the issues they discussed.

Following *appreciation* resources, the authors of English popularized science articles included more cases of *affect* resources (192: %15.81) compared to their counterparts that wrote the academic texts (118: %13.84).

Academic Research Article Examples

1) This may be because a *prevention-focused* employee is more *conscientious* and *duty-bound*

(*Current Psychology*, 2021)

Popularized Science Articles Examples

2) My father was a widely *beloved* individual.

(*New Scientist*, 2021)

3)were *worried* about public transport and 20per cent were *anxious* about

(*New Scientist*, 2021)

As these examples indicate, the *affect* resources were represented in the application of such adjectives as *prevention-focused*, *duty-bound*, *conscientious*, *vigilant*, *beloved*, *worried*, and *anxious* to manage their reactions to the individuals (White, 1998). The authors of both corpora seemed to rightly exercise constructing interpersonal bonds with the audience (White, 2014).

The analysis further demonstrated a far less number of *judgment* resources in the popularized corpus (2: %0.16) while these were completely absent in the academic corpus.

Popularized Science Articles Examples

1) According to a Pew Research survey, Mia is *right*... ..

(*New Scientist*, 2021)

2) They are all *right*.

(*New Scientist*, 2021)

Discussion

The present study aimed to investigate the traces of evaluative language use represented in attitude resources of the appraisal theory across two genres, academic scholarly articles, and popularized texts, within the same area of inquiry (i.e. psychology). The results of the analysis disclosed no significant difference between the academic articles published in the scholarly venue of research and the articles published in popularized sources in terms of the frequency of *appreciation*, *affect*, and *judgment* resources. The findings referred to the high prevalence of *appreciation* markers, followed by *affect* resources. Interestingly, the analysis revealed the scarcity of *judgment* in the two corpora. In this regard, only two cases were coded in the popularized corpus, which seems to be negligible.

The results debunked the widely held belief in the purely objective descriptive nature of the truth presented in academic texts (Zhang, 2015). The deployment of attitude resources by the experts in the field of psychology revealed the academics' tendency to "involve themselves in the written communication" (Zhang, 2015, p. 9) and try out their powers of persuasion in their academic community. This confirmed their keenness to both inform and entice their audience (Hyland & Tse, 2004).

It seems that the recent findings related to psychological issues are presented in a persuasive manner to be embraced by the scholarly audience. Nevertheless, this is cautiously done by including less overt value judgments and lower degrees of subjectivity by means of inserting more *appreciation* and fewer, even no, cases of *affect* and/or *judgment* markers. The simultaneous commitment to the persuasive "media rules" and rigorous "institutional values of science" (Russell, 2010, p. 173) is manifested in the considerable use of *appreciation* resources and a paucity of the other two subcategories of attitude resources. These discursive practices enable the psychology experts to make a proper subjective evaluation and provide interpretive accounts of their research outcomes that are perceived by their peers in the academic communities (Hyland & Tse, 2004).

Indeed, they included the safest subcategory of attitude resources to confer with their scholarly or non-scholarly audience. In this way, they substantiated the groundlessness of the widely held myth about the totally impartial and objective nature of the scientific inquiries (Crismore & Farnsworth, 1990). Nonetheless, their marked preference to exclude their emotional reactions and judgments from the knowledge circulation process might signify their

academic wisdom. On the other hand, the widespread presence of *appreciation* resources in the popularized articles demystifies the psychology experts' cognizance of the capacity of media (e.g. popularized magazines) to attract a broad range of audiences (Ben-Ari, 1999). They seem to view *appreciation* resources as valuable tools for both convincing the scholarly audience of the novelty and absolute fidelity of their scientific discoveries (Saidi, 2021) and providing the non-scholarly audience with a comprehensible account of their research outcomes (Ren & Zhai, 2010).

The results were commensurate with those of the prevailing literature (Babaii et al., 2017; Fitriati & Solihah, 2019; Saidi, 2021). Similar to Babaii et al. (2017), the analysis of popularized texts in psychology also indicated the authors' higher tendency to include a large number of attitude resources to reach their given non-professional audiences. Furthermore, the study corroborated Fitriati and Solihah's (2019) findings which referred to a high occurrence of appreciation resources in the "Introduction" section of academic research articles. Likewise, the results confirmed the previously conducted studies (Saidi, 2021) which showed a high prevalence of attitude resources in general and appreciation devices in particular in the "Results" and "Discussion" sections of English and Persian academic research articles in the field of nutrition. However, they were at odds with the findings of Tutin's (2010) study which revealed the absence of subjectivity in academic research articles in social sciences and humanities. In this regard, the findings demystified the traces of subjectivity in a life-related discipline (i.e. psychology) which is categorized as a field in social sciences.

Notwithstanding the undeniable value of attitude resources in arousing, developing, and increasing the professional and non-professional audience's interest in attaching a high value to the presented propositions, the authors seemed to overlook the recipient design (Sacks et al., 1974) and axioms of proximity (Hyland, 2010) in addressing two groups with different degrees of expertise. This might root in the nature of psychology as the science of life, which makes its research products quite intriguing even for the public. In reporting the results of mind-related research, the psychology experts seem to be prone to provide the audience with their positive or negative frames of mind (White, 1998). Nevertheless, the evaluative tools were used to serve different purposes. In the academic genre, they were employed to provoke a cogent argument. In the popularized discourse, on the other hand, they were inserted to smoothen the toughness of technical-scientific information (Ben-Ari, 1999). This might represent a dramatic shift from "understanding to engagement" in science communication (Russell, 2010, p. 87).

The results may indicate that the experts in the field of psychology found the results and discussion sections of the research articles and popularized texts as the locus of grappling with their attitudinal stances towards their words (Ben-Ari, 1999). To pursue this goal, employing evaluative resources seems to be a *sine qua non*. The authors were, though, conservative in their evaluative practices. The lower proclivity towards including *affect* and *judgment* may signify their heedfulness in observing the long experienced norms of objectivity in publishing and disseminating the results of their research (Parkinson & Adendorff, 2004).

Conclusion

The current study investigated the representation of attitude resources of appraisal theory in academic and popularized corpora in the field of psychology. The findings pointed to the prevalence of *appreciation* resources in communicating scientific discoveries to the expert and public communities. Furthermore, the results revealed the low frequency of occurrence of *affect* and *judgment* resources in the two sets of articles. The study demonstrated the psychology experts' appealing to the *appreciation* markers in order to persuade both professional and non-professional audiences to read and follow the outcomes of their scientific inquiries. It might be inferred that the academics in the field of psychology are, either consciously or unconsciously, wise about their choices of the available discursive tools to present a convincing, yet intriguing, account of their discoveries (Bowler, 2009).

The results challenged the widely approved view of the value-free nature of science (Zhang, 2015) and falsified "the objective or impersonal convention of the academic community" (Zhang, 2015, p. 9). Aiming to reconfigure the boundaries between the academic and popularized accounts of the recent scientific findings, the psychology experts seem to employ attitude resources of the appraisal theory at the service of impressing their scholarly and non-scholarly audience (Hyland & Tse, 2004).

The findings also signified the psychology experts' growing inclination to inject attitude resources in their writings in order to establish strong bonds with their audience, regardless of their degree of expertise (Lievrouw, 1990). They seem to be "more evert in their evaluation of ideas" (Parkinson & Adendorff, 2004, p. 388) through including *appreciation* markers and simultaneously conservative in violating the norms of objectivity through making less use of *affect* and *judgment* resources. The results of the study may lead to this conclusion that successful communication of scientific findings in the field of psychology, in both academic and non-academic contexts, entails the inclusion of such evaluative resources as *appreciation*

markers. In this way, the intended readers' interest is maintained throughout the texts of the scientific articles either in academic journals or popularized magazines. Acting as both informative and intriguing sources of information about the latest discoveries related to psychological issues, the academic and popularized discourses require their authors to make proper and pertinent use of the *appreciation* tools and construct wise attitudinal personas.

The findings of the present study expand the current literature on science popularization and appraisal framework. To the best of the researchers' knowledge, this is the first study that attempted to shed light on the representation of evaluative language in academic and popularized science articles in the field of psychology. The study opens up new lines of research to unravel the discursive evaluative practices of experts across various disciplines. The results can be transferred to the English for Academic Purposes (EAP) courses, English for the students of psychology, in this case, to raise the instructors' and learners' awareness of the peculiarities of their field in academic and non-academic discursive practices in terms of the attitude resources. In this sense, the academic writing materials can be enriched by including a wide range of tasks that gear to the recognition and production of evaluative resources. This enables future psychologists and experts to accommodate their scientific discourse based on their audience's shared bulk of knowledge (Dafouz-Milne, 2008). The identification of the evaluative tools in the passages to which psychology students expose in academic reading courses can enhance their awareness of the attitudinal stances taken by the established members of their academic community.

The study focused on analyzing attitude resources of the appraisal theory in academic and popularized corpora in the field of psychology. The study can be replicated by analyzing these resources in larger samples from various academic and popularized venues of publication. Further studies can focus on the two corpora extracted from the scholarly journals and popularized sources from other fields of study. The oral academic presentation in conferences and persuasive talks on television and radio can be compared in terms of evaluative language. In addition, a cross-linguistic analysis of the academic and popularized articles can be conducted focusing on different categories and subcategories of the appraisal framework.

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Appendices

Appendix A: Academic Corpus

1. Allen, C., & Nettle, D. (2021). Hunger and socioeconomic background additively predict impulsivity in humans. *Current Psychology*, 40(5), 2275-2289.
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Appendix B: Popularized Corpus

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2. Bahler, K. (2020, May). A stressed out generation. *Newsweek*, 174(13), 16-20.
3. Burnett, D. (2021, April). The science of grief. *New Scientist*, 250(3331), 21.
4. Ceurstemont, S. (2021, June). Humans and other life. *New Scientist*, 250(3337), 31.
5. Challenger, M. (2021, February). Mental slander. *New Scientist*, 249(3323), 21.
6. Charles, K. (2021, May). Negative events before birth increase mental health risk. *New Scientist*, 250(3333).
7. Chowdhury, R. (2021, February). Cloning makes perfect. *New Scientist*, 249(3323), 29-30.
8. Chowdhury, R. (2021, June). Brain tech vs real life. *New Scientist*, 250(3338), 34.
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10. Clark, D. (2020, October). Anxious Work? Try This. *Newsweek*, 175(11), 14-15.
11. Coleman, P. (2021, March). The exhausted Americans. *Newsweek*, 176(07), 11-14.
12. Dunbar, R. (2021, March). Friendship-ology. *New Scientist*, 249(3324), 36-40.
13. Eagleman, D. (2021, May). I'm interested in whether we can create new senses. *New Scientist*, 249(3318), 46-49.
14. Fleming, S. (2021, May). The power of self-reflection. *New Scientist*, 250(3333), 36-40.
15. Foulkes, J. (2021, June). Don't judge. *New Scientist*, 250(3338), 25.
16. Goodwin, J. (2021, April). How to *Keep Your Brain Blooming*. *New Scientist*, 250(3330), 38-42.
17. Lawton, G. (2021, March). Don't Act Your Age!. *New Scientist*, 249(3326), 36-40.
18. Li, G. (2021, May). Discrimination is still a problem in STEM. *New Scientist*, 250(3333), 20-21.
19. Marshall, M. (2021, June). Brain is most detailed ever. *New Scientist*, 250(3338), 12.
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22. Mikolajczak, M. (2021, January). What we found was shocking. The stress levels of burned-out parents were higher than those of people in severe pain. *New Scientist*, 249(3318), 40-43.
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25. Robson, D. (2021, April). Clever creatures. *New Scientist*, 250(3329), 36-40.
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27. Schonfeld, A. (2020, June). Cultural adaptations in the time of corona. *Newsweek*, 174(17), 46-47.
28. Shah, K. (2021, April). Distress after killings. *New Scientist*, 250(3331), 12.
29. Steele, F. (2021, January). Dementia's identity crisis. *New Scientist*, 249(3317), 32.
30. Sternberg, R. (2021, January). Rethinking intelligence. *New Scientist*, 249(3317), 36-41.
31. Tait, A. (2021, May). Why can I never be bothered?. *New Scientist*, 250(3336), 41-45.
32. Thomson, H. (2021, April). Meditation can help with covid-19 anxiety. *New Scientist*, 250(3328), 10.
33. Thomson, H. (2021, April). Why going back to offices may affect mental health. *New Scientist*, 250(3330), 10.
34. Venkatramani, V. (2021, June). A toast to civilization. *New Scientist*, 250(3337), 30.
35. Webb, R., & Nicholas, K. (2021, May). This is a terrifying, nail-biting, exciting time to be alive. *New Scientist*, 250(3335), 40-43.
36. Williams, C. (2021, February). Heading for burnout?. *New Scientist*, 249(3318), 34-38.
37. Williams, C. (2021, May). Mind-altering moves. *New Scientist*, 250(3335), 34-38.
38. Wilson, C. (2021, April). Fabulous Front Gardens. *New Scientist*, 250(3331), 51.