LINGUISTICALLY PACKAGING OPINION: A QUANTITATIVE TOKEN-BASED ANALYSIS OF ADJECTIVE STRUCTURES IN ENGLISH

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Abstract
This study examines the distribution and characteristics of three linguistic structures across three different semantic types of adjectives in English: opinion-based (evaluative), mixed (dimensional), and non-opinion (objective) adjectives. While previous research has explored the perception of subjective adjectives in varied linguistic environments through experimental methods, our research provides quantitative corpus-based evidence from Universal Dependencies English corpora. The analysis focuses on three syntactic structures: modification of a noun (Adj+Noun), predicative construction with nexus (Nexus+Cop+Adj), and predicative construction with noun subject (Noun+Cop+Adj). Results reveal significant patterns: opinion adjectives display greater structural flexibility, appearing with meaningful frequency in both attributive and predicative positions, while dimensional adjectives strongly favor attributive position. The study also identifies consistent positional patterns across all adjective types, with attributive structures typically appearing later in sentences than predicative constructions. Furthermore, register variations were observed, with web language showing distinctive distributional patterns for opinion adjectives compared to more varied texts.

Keywords: evaluative adjectives, syntactic distribution, opinion markers, corpus linguistics, information structure

1. Introduction

The linguistic expression of opinion represents a fundamental aspect of human communication that operates at the interface of semantics, syntax, and pragmatics. How speakers and writers package evaluations—whether as presupposed background information or as explicit assertions—can significantly influence how these opinions are perceived and processed by recipients (Kaiser & Wang, 2021). This packaging of opinion manifests in various syntactic structures that may either foreground subjective content as the main assertion or background it as presupposed information, creating a rhetorical effect where opinions can appear more or less factual depending on their linguistic presentation (Vallduví & Engdahl, 1996).

Adjectives, as primary carriers of evaluation in language, offer a particularly rich domain for examining how opinions are encoded syntactically. Previous research has established semantic distinctions among adjective types, categorizing them broadly as evaluative (e.g., "important," "amazing"), dimensional (e.g., "long," "heavy"), and objective (e.g., "plastic," "triangular") (Sassoon, 2013). While evaluative adjectives express subjective judgments that allow for faultless disagreement, dimensional adjectives reference measurable but context-dependent properties, and objective adjectives denote factual properties that do not typically permit faultless disagreement.

The syntactic realization of these semantic types has been explored primarily through experimental methods, notably by Kaiser and Wang (2021), who demonstrated that the same adjective may be perceived differently depending on its syntactic position. Their findings suggest that adjectives in attributive position (e.g., "The amazing orchestra") tend to be perceived as more factual than those in predicative position (e.g., "The orchestra was amazing"), with relative clause constructions (e.g., "The orchestra, which was amazing") falling somewhere in between. These experimental results raise important questions about the actual distribution of such structures in authentic language use across different contexts and adjective types.

While experimental approaches provide valuable insights into how structures are perceived, corpus-based investigations can reveal how speakers and writers actually deploy these structures in natural language. To date, however, comprehensive quantitative analyses examining the relationship between adjective semantics and syntactic realization in corpus data remain limited. This gap is particularly notable given the theoretical and practical importance of understanding how opinion is linguistically packaged in various contexts.

The present study addresses this gap by conducting a quantitative token-based analysis of three syntactic structures across three semantic types of adjectives in English using the Universal Dependencies corpora (Nivre et al., 2017). Specifically, we examine: (1) attributive adjectival constructions (Det + Noun + Adj), (2) predicative constructions with nexus (Nex + Aux + Adj), and (3) predicative constructions with noun subjects (Noun + Aux + Adj). By systematically analyzing their distribution, positional patterns, and contextual variations across different adjective types and corpus registers, we aim to provide empirical evidence for how opinions are linguistically encoded in authentic language use.

This study is guided by three primary research questions:

1. To what extent do different semantic types of adjectives (evaluative, dimensional, and objective) show preferences for particular syntactic structures in English?
2. What positional patterns emerge across these structures, and how might these relate to information structure principles?
3. How do different register types influence the distribution of these structures across adjective types?

By addressing these questions, the present study contributes to our understanding of the semantic-syntactic interface in English and provides insights into how speakers

and writers strategically package opinions through linguistic choices. This knowledge has implications not only for linguistic theory but also for computational approaches to opinion mining, discourse analysis, and language teaching.

2. Theoretical Framework and Literature Review

2.1. The semantics of adjective types

The semantic classification of adjectives has received considerable attention in linguistic research, with several taxonomies proposed to capture their diverse nature. Particularly influential is the work of Sassoon (2013), who established a typology of multidimensional adjectives based on their evaluative properties and truth-conditional behavior. Following this framework, adjectives can be categorized into three primary semantic types that form the basis of our analysis.

Evaluative (opinion-based) adjectives, such as "important," "amazing," "incredible," and "impressive," express subjective judgments that are inherently multidimensional and allow for faultless disagreement (Kölbel, 2004; Lasersohn, 2005).

These adjectives typically involve speaker-dependent criteria and cannot be verified through objective measurement alone. As Kennedy (2013) notes, their application depends on contextually determined standards that may vary across speakers, making them prototypically subjective.

Dimensional adjectives, including "long" and "heavy," occupy an intermediate position in the subjectivity spectrum. While they reference properties that are measurably quantifiable, their application remains context-dependent, requiring reference to comparison classes or standards that may vary situationally (Kennedy, 2007). Unlike purely evaluative adjectives, dimensional adjectives have more clearly defined criteria for application, yet they still permit some degree of faultless disagreement when borderline cases or different standards are involved.

Objective adjectives, such as "plastic" and "triangular," denote factual properties that typically do not allow for faultless disagreement (Umbach, 2016). These adjectives generally have clear extension boundaries and application criteria that are largely speaker-independent. Their truth conditions can usually be verified through empirical observation rather than subjective evaluation.

This semantic gradient from subjective to objective provides a foundation for examining how adjective semantics might correlate with syntactic realization, as different semantic properties may predispose adjectives toward particular structural environments.

2.2. Syntactic structures and information packaging

The relationship between syntactic structure and information packaging has been extensively studied, notably by Vallduví and Engdahl (1996), who proposed that different syntactic configurations serve to organize information according to its

informational status. Central to our analysis are three primary syntactic structures in which adjectives commonly appear in English.

The attributive position (Structure 1: Det + Noun + Adj), where the adjective is embedded within a noun phrase (e.g., "the amazing orchestra"), tends to package the adjectival content as presupposed or background information. This structure integrates the property directly into the referent's description, presenting it as given information rather than as the main assertion of the utterance. As Bolinger (1967) noted, attributes in this position often function to identify or classify the referent rather than to predicate a property of it.

The relative clause construction (Structure 2: Nexus + Aux + Adj), where the adjective appears in a subordinate clause (e.g., "the orchestra, which was amazing"), presents the adjectival content as supplementary or parenthetical information. This structure packages the property as new but secondary information, syntactically marking it as less central to the main discourse purpose (Potts, 2005; Harris & Potts, 2009).

The predicative position (Structure 3: Noun + Aux + Adj), where the adjective functions as the main predicate (e.g., "the orchestra was amazing"), presents the adjectival content as the primary assertion or news of the utterance. This structure explicitly foregrounds the property as the main communicative point, making it the clearest presentation of new information (Lambrecht, 1994).

These syntactic configurations align with information structural distinctions between given/presupposed information and new/asserted information, potentially influencing how the content is perceived and processed by recipients.

2.3. Experimental evidence on structure and perception

Experimental research has provided evidence that syntactic structure influences the perception of adjective subjectivity. Most notably, Kaiser and Wang (2021) conducted a series of experiments examining how syntactic position affects the perceived factuality or subjectivity of adjectives. Their findings demonstrated a consistent pattern: the same adjective was perceived as more opinion-like in predicative position, more fact-like in attributive position, and intermediate in relative clause position.

For evaluative adjectives, Kaiser and Wang (2021) found average subjectivity ratings of 3.67 for prenominal position, 4.22 for relative clauses, and 4.60 for predicative position (on a scale where 1=fact, 6=opinion). Similar patterns emerged for dimensional adjectives, albeit with lower overall subjectivity ratings (2.74, 3.13, and 3.34 respectively). Interestingly, objective adjectives showed minimal variation across positions (1.42, 1.38, and 1.55), suggesting that strong factual semantics may override structural influences.

These experimental results align with Baker and Wagner's (1987) earlier findings on the effects of logical subordination on information evaluation. They demonstrated that information presented in main clauses was more likely to be scrutinized for truthfulness than information presented in subordinate clauses, suggesting that syntactic subordination influences how content is processed and evaluated.

While these experimental studies provide valuable insights into perception and processing, they leave open questions about actual usage patterns in authentic discourse. Do speakers and writers distribute adjective types across syntactic structures in ways that align with these perceptual effects? Are there systematic differences in how different adjective types are realized syntactically in natural language? And do these patterns vary across different registers or discourse contexts?

2.4. Corpus-based approaches to adjective structure

Corpus-based investigations of adjective positioning have primarily focused on the attributive-predicative distinction without necessarily considering semantic adjective types or information structural properties. Studies by Biber et al. (1999) and Huddleston and Pullum (2002) have offered grammars of English (including our object of study) in which the corpus plays an important role, as it is the basis on which linguistic theory can be built.

More targeted corpus studies have examined specific aspects of adjective positioning. Wulff (2003) investigated factors influencing attributive vs. predicative use, finding that semantic class, morphological complexity, and frequency all play roles in determining positional preferences. Similarly, Szmrecsanyi (2005) explored corpora to determine preferences for persistence in the use of different choices of comparative adjective forms depending on whether their position is attributive or predicative.

However, few corpus studies have systematically examined the three-way interaction between adjective semantics, syntactic structure, and register variation that is the focus of the present investigation. The Universal Dependencies framework (Nivre et al., 2017) offers a particularly valuable resource for such analysis, providing consistently annotated data across multiple registers and genres, allowing for systematic comparison of patterns across different discourse contexts.

2.5. Register variation and linguistic choices

Register, defined as language variation according to use in particular situations (Biber & Conrad, 2019), represents another important dimension in understanding adjective realization. Different communicative contexts impose different functional requirements that may influence structural choices. Formal academic and legal writing tends to favor compact noun phrases with attributive modifiers, potentially backgrounding opinions as presupposed information. In contrast, more interactive registers such as conversation and personal blogs often show higher rates of predicative structures, foregrounding evaluations as explicit assertions.

These register differences suggest that the packaging of opinion may be influenced not only by the semantics of the adjective itself but also by the communicative norms and purposes of the discourse context. Web language, for instance, may show distinctive patterns related to its often evaluative and interactive functions, while news

or academic writing may exhibit different tendencies reflecting their informational focus and expectations of objectivity.

2.6. Research gap and present study

While existing research has separately addressed adjective semantics, syntactic positioning, and register variation, there remains a need for integrated analysis examining how these factors interact in authentic language use. The experimental findings of Kaiser and Wang (2021) provide valuable hypotheses about potential correlations between adjective types and structural preferences, but these need to be tested against corpus evidence.

The present study addresses this gap by conducting a comprehensive quantitative analysis of three syntactic structures across three semantic types of adjectives in English, drawing on Universal Dependencies corpora representing a range of registers. By examining not only frequency distributions but also positional patterns and corpus-specific variations, we aim to provide empirical evidence for how opinions are linguistically packaged across different contexts and adjective types.

This approach allows us to test whether the perceptual patterns identified in experimental research are mirrored in production patterns in authentic discourse, contributing to a more complete understanding of the semantic-syntactic interface in English and its role in opinion expression.

3. Methodology

3.1. Data Sources

This study employs the Universal Dependencies (UD) corpora for English (Nivre et al., 2017), a collection of consistently annotated linguistic resources that provides several advantages for our analysis. The UD framework offers uniform syntactic and morphological annotation across different languages and text types, making it particularly suitable for systematic syntactic analysis. For our study, we focused exclusively on the English-language corpora, which include a diverse range of registers and genres.

The primary corpora utilized in this study include:

1. GUM (Georgetown University Multilayer Corpus): A varied corpus containing academic, biography, conversation, fiction, how-to guides, interviews, news, travel guides, and wiki texts.
2. EWT (English Web Treebank): Primarily web language, including blog posts, reviews, emails, newsgroups, and question-answer forums.
3. LinES (English-Swedish Parallel Treebank): Contains fiction, non-fiction, and spoken dialogue.
4. ParTUT: Includes legal, news, and wiki texts with a more formal register.

These corpora collectively provide a representative sample of English across different registers, allowing us to examine not only general patterns but also register-specific variations in adjective usage and syntactic realization.

3.2. Formalization of analyzed structures

To systematically extract and analyze the target structures across the corpora, we formalized three syntactic patterns using the dependency grammar notation of the Universal Dependencies framework:

Structure 1 (Attributive position: Det + Noun + Adj)

```
pattern {A[upos=ADJ, lemma="X"]; B[upos=NOUN|PROPN]; B->A}
```

This pattern identifies adjectives (with lemma "X") that modify nouns or proper nouns through an attributive relationship.

Structure 2 (Relative clause construction: Nexus + Aux + Adj)

```
pattern {A[upos=PRON, PronType=Rel]; B[upos=AUX]; C[upos=ADJ, lemma="X"]; B-[subj]->A; B-[comp:pred]->C}
```

This pattern captures relative pronouns followed by auxiliary verbs and adjectives (with lemma "X"), where the pronoun is the subject of the auxiliary and the adjective is its predicative complement.

Structure 3 (Predicative position: Noun + Aux + Adj)

```
pattern {A[upos=ADJ, lemma="X"]; B[upos=NOUN|PROPN]; C[upos=AUX]; C-[subj]->B; C-[comp:pred]->A}
```

This pattern identifies adjectives (with lemma "X") that function as predicative complements of auxiliary verbs with noun or proper noun subjects.

These formalized patterns were implemented as search queries to extract relevant instances from the corpora.

3.3. Adjective selection and dataset creation

To examine semantic type effects, we selected representative adjectives from each of the three semantic categories described in our theoretical framework, following the classification and the same words used in Kaiser and Wang (2021):

1. Evaluative (Opinion) Adjectives: "important", "amazing", "incredible", "impressive"
2. Dimensional (Mixed) Adjectives: "long", "heavy"
3. Objective (Non-Opinion) Adjectives: "plastic", "triangular"

For each adjective, we extracted all instances matching the three syntactic patterns described above. Additionally, to establish baseline distributions, we

conducted a general search without lemma restrictions for all adjectives across the same structures.

This extraction process resulted in the creation of four separate datasets:

1. OPINION Dataset: 117 occurrences of our evaluative adjectives across the three structures
2. MIX Dataset: 131 occurrences of our dimensional adjectives across the three structures
3. NO_OPINION Dataset: 5 occurrences of our objective adjectives across the three structures
4. LARGE Dataset: 19,646 occurrences of all adjectives across the three structures (without lemma restrictions)

The relatively small size of the NO_OPINION dataset reflects the overall lower frequency of the selected objective adjectives in the corpora, a limitation we address in our discussion section.

3.4. Variables and analysis approach

For each extracted occurrence, we recorded and analyzed the following variables:

1. Structure Type: Categorized as Structure 1, 2, or 3 as defined above.
2. Adjective Type: Categorized as Opinion, Mix, or No_Opinion based on the lemma.
3. Corpus Source: The specific corpus from which the occurrence was extracted.
4. Sentence Position: The position of the structure within its sentence, measured by token number.

We employed both quantitative and qualitative approaches to analyze these variables. The quantitative analysis focused on calculating frequency distributions of structures across adjective types, average positional patterns, and corpus-specific variations. These calculations were performed using Python scripts designed to process the extracted dependency trees.

The qualitative analysis examined specific instances to identify patterns in the lexical and syntactic environments of different structures and adjective types, providing context for the quantitative findings.

3.5. Statistical analysis

We used analysis of variance (ANOVA) to assess the significance of positional differences across structures and adjective types, with post-hoc tests to identify specific group differences. For corpus-specific analyses, we calculated normalized frequencies to account for the different sizes of the source corpora, allowing for meaningful comparisons across register types. This methodological approach enables a systematic examination of the relationship between adjective semantics, syntactic structure, and register variation, providing empirical evidence to address our research questions about the linguistic packaging of opinion in English.

4. Results

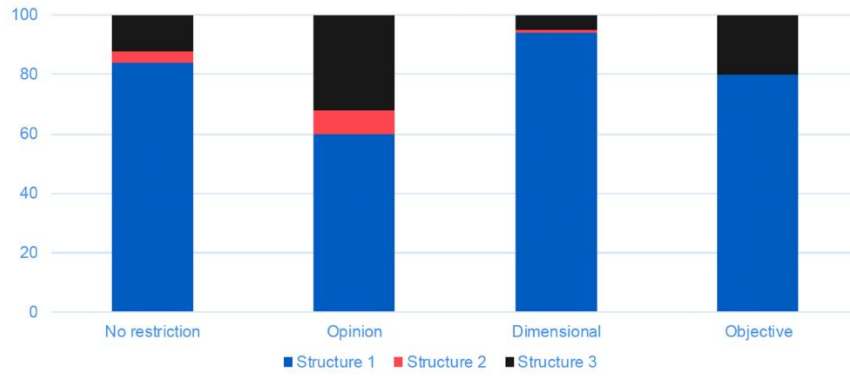
4.1. Overall distribution of structures across adjective types

The first stage of analysis examined the frequency distribution of the three syntactic structures across the different adjective types. Table 1 and Figure 1 present these distributions as both raw counts and percentages within each dataset.

Table 1: Frequency of Structures Across Adjective Types

Structure	Description	OPINION	MIX	NO_OPINION	LARGE Dataset
Structure 1	Det + Noun + Adj	70 (59.8%)	123 (93.9%)	4 (80.0%)	16,486 (83.9%)
Structure 2	Pron/Conj + Aux + Adj	9 (7.7%)	1 (0.8%)	0 (0.0%)	848 (4.3%)
Structure 3	Noun + Aux + Adj	38 (32.5%)	7 (5.3%)	1 (20.0%)	2,312 (11.8%)
TOTAL		**117 (100%)**	**131 (100%)**	**5 (100%)**	**19,646 (100%)**

Figure 1: Distribution of Frequency of Structures Across Adjective Types



These results reveal several notable patterns. First, Structure 1 (attributive position) dominates across all datasets, aligning with the general tendency in English for adjectives to appear in attributive position. However, the degree of this dominance varies substantially by adjective type. While dimensional (MIX) adjectives show an overwhelming preference for Structure 1 (93.9%), evaluative (OPINION) adjectives exhibit a more balanced distribution, with Structure 1 at 59.8% and Structure 3 (predicative position) at a substantial 32.5%.

Structure 2 (relative clause construction) is consistently the least frequent across all datasets, but shows a notably higher presence with opinion adjectives (7.7%) compared to dimensional adjectives (0.8%) and objective adjectives (0%).

Statistical analysis using the chi-square test of independence confirmed that the observed differences in distribution across adjective types are significant ($\chi^2(4, N=253) = 41.92$, $p < .001$), indicating a strong association between adjective semantics and syntactic realization.

When comparing these distributions to the general pattern observed in the LARGE dataset (containing 19,646 occurrences without lemma restrictions), we note that the overall preference hierarchy (Structure 1 > Structure 3 > Structure 2) remains consistent across all adjective types. This suggests that while semantic factors influence structural distribution, they operate within the constraints of general syntactic tendencies in English.

The most striking deviation from the general pattern appears in the OPINION dataset, where Structure 3 (predicative position) accounts for 32.5% of occurrences, nearly triple the 11.8% observed in the general dataset. This indicates that opinion adjectives are substantially more likely to appear in predicative constructions than adjectives in general, suggesting a specific affinity between evaluative semantics and explicit predication.

Dimensional adjectives, by contrast, show an even stronger preference for Structure 1 than the general pattern (93.9% versus 83.9%), suggesting that these measurable but context-dependent properties are particularly suited to attributive realization. The extreme concentration of dimensional adjectives in Structure 1 suggests a highly conventionalized pattern of usage that may reflect cognitive or communicative constraints specific to this semantic category.

The objective adjectives, while represented by a limited sample, appear to follow the general pattern more closely than either opinion or dimensional adjectives, with a distribution that approximates the overall frequencies. However, the absence of any occurrences in Structure 2 for this category, while not statistically significant given the small sample size, hints at potential constraints on the realization of objective properties in relative clause constructions.

Taken together, these distribution patterns provide strong quantitative evidence that adjective semantics significantly influences syntactic realization in English, with opinion adjectives showing greater structural flexibility than dimensional adjectives. This finding aligns with but also extends previous experimental research by demonstrating that these patterns emerge in authentic language use rather than merely in perception tasks.

4.2. Positional Patterns Across Structures and Adjective Types

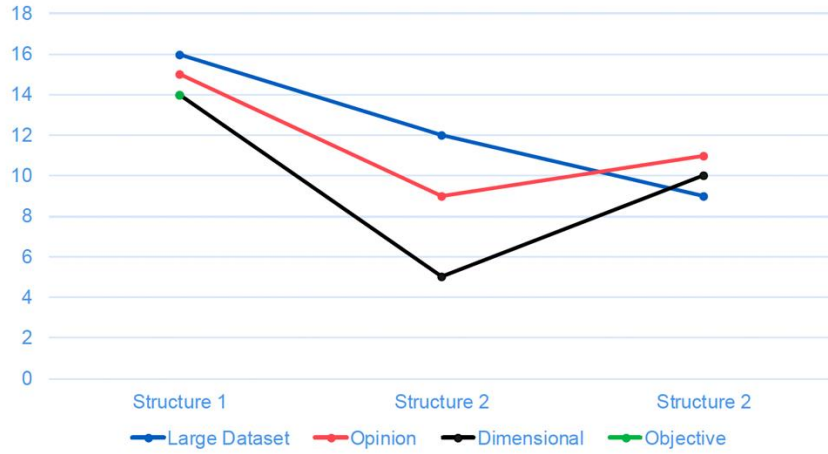
The second stage of analysis examined the average position of each structure within sentences, measured by token number from the beginning of the sentence. Table 2 and Figure 2 present these positional averages across the datasets.

Table 2: Average Position in Sentence Across All Datasets

Structure	LARGE Dataset	OPINION	MIX	NO_OPINION
Structure 1	15.81	15.14	14.38	14.25
Structure 2	11.78	8.89	5.00	N/A*
Structure 3	9.33	10.66	10.14	3.00*

*For objective adjectives: data not representative in structures 2 and 3 due to limited sample size

Figure 2: Distribution of Average Position in Sentence Across All Datasets



These positional data reveal consistent patterns across all datasets. Structure 1 (attributive position) tends to appear furthest from the beginning of sentences (positions 14-16), while Structures 2 and 3 (relative and predicative constructions) generally appear earlier (positions 5-11). This pattern is remarkably consistent across adjective types, suggesting that positional tendencies may be more strongly influenced by the structure itself than by the semantic type of adjective.

The consistency of this positional pattern is particularly noteworthy given the significant differences in structural distribution documented in section 4.1. While adjective types vary markedly in their structural preferences, the positional realization of each structure remains stable across semantic categories. Structure 1 consistently appears later in sentences regardless of whether it contains an opinion adjective, a dimensional adjective, or an objective adjective.

This positional regularity suggests a potential information-structural explanation that transcends semantic categories. Structure 1 (attributive position), by consistently appearing later in sentences, may be functioning to package adjectival content as background or presupposed information. Since complex noun phrases typically elaborate upon already-established discourse entities, the later position of attributive constructions may reflect their role in providing supplementary rather than primary information.

Conversely, Structures 2 and 3 (relative and predicative constructions), which consistently appear earlier in sentences, may function to foreground adjectival content as primary assertions or discourse-new information. Their earlier position aligns with the typical placement of main predications in English sentences, suggesting that these structures more commonly form part of the main proposition being communicated.

The early positioning of Structure 2 with dimensional adjectives (position 5.00) compared to opinion adjectives (position 8.89) warrants particular attention, although the limited number of occurrences for dimensional adjectives in this structure (n=1) necessitates caution in interpretation. This single occurrence may represent a specialized usage pattern where dimensional properties are specifically foregrounded through early positioning in relative constructions.

Structure 3 shows remarkable consistency in positioning between opinion and dimensional adjectives (positions 10.66 and 10.14 respectively), suggesting that when dimensional properties do appear in predicative position, they follow similar positional patterns to opinion adjectives. This consistency further supports the interpretation that positional realization is primarily determined by structural rather than semantic factors.

The relationship between sentence position and information structure raises intriguing questions about the cognitive and communicative motivations behind these patterns. One possible interpretation is that adjectival content appearing later in sentences has undergone more linguistic elaboration before presentation, allowing it to be packaged as known or given information within complex referring expressions. Early-appearing adjectival content, by contrast, may more commonly function as the primary assertion being communicated.

These findings extend previous research on information structure in English by demonstrating systematic positional patterns specific to different adjectival constructions. While previous studies have documented general tendencies for given information to precede new information at the clause level, our findings suggest more complex patterns at the phrasal level, with attributive constructions consistently appearing later than predicative or relative constructions regardless of semantic content.

4.3. Distribution by Corpus Type

The third stage of analysis examined how the distribution of structures varies across different corpus types, focusing on the three largest corpora in our dataset: GUM, EWT, and LinES. Figures 3 and 4 present these distributions for each adjective type, opinion adjectives and dimensional adjectives respectively.

Figure 3: Distribution of Opinion Adjectives by Corpus

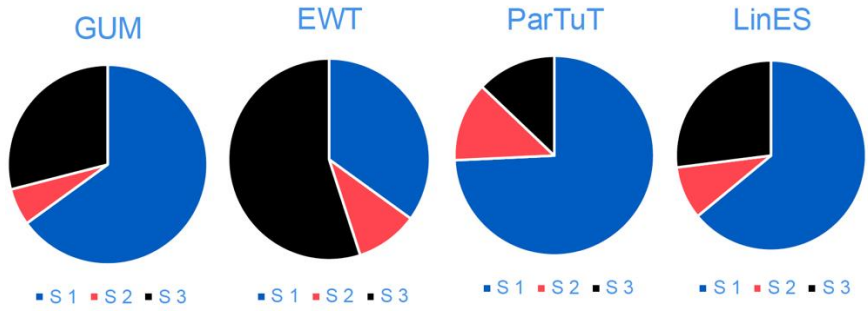
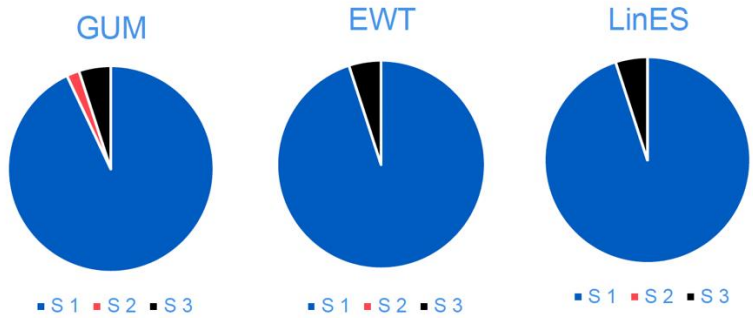


Figure 4: Distribution of Dimensional Adjectives by Corpus



These corpus-specific distributions reveal striking register variations, particularly for opinion adjectives. The most notable pattern appears in the EWT corpus (web language), which displays a dramatically different distribution for opinion adjectives compared to other corpora. While GUM, ParTUT, and LinES all show a clear preference for Structure 1 (attributive position) with opinion adjectives (65%, 75%, and 64% respectively), the EWT corpus shows a reversed pattern, with Structure 3 (predicative position) dominating at 55%, followed by Structure 1 at only 35%.

This distinctive pattern in web language suggests a register effect specific to evaluative language in interactive or informal online contexts. The predominance of predicative constructions (Structure 3) in web language may reflect the communicative purposes of these texts, which often explicitly foreground personal opinions and evaluations as their primary content. This aligns with the functional characteristics of web genres such as reviews, social media posts, and forum discussions, where expressing subjective assessments is frequently the main communicative goal.

By contrast, the more formal registers represented in ParTUT (legal, news, and wiki texts) show the strongest preference for attributive realization of opinion adjectives (75%), potentially reflecting a rhetorical strategy where opinions are backgrounded as presupposed information rather than explicitly asserted. This may

serve to create an impression of objectivity by embedding evaluative content within noun phrases rather than highlighting it through predicative constructions.

Interestingly, Structure 2 (relative clause construction) shows its highest frequency in ParTUT (12.5%), suggesting that formal registers may employ this intermediate structure as a compromise between explicit assertion and complete backgrounding of opinions.

The GUM and LinES corpora, representing more varied registers, show remarkably similar distributions for opinion adjectives, with a clear preference for Structure 1 but also substantial representation of Structure 3. This suggests that these balanced corpora capture the general tendency in English to favor attributive position while still accommodating significant variation based on communicative intent.

Turning to dimensional adjectives (Figure 4), the distributional patterns show striking consistency across all corpus types. Structure 1 (attributive position) overwhelmingly dominates in all corpora: GUM (92.9%), EWT (95%), and LinES (94.7%). Structure 3 (predicative position) appears with minimal frequency (4.8-5.3%), and Structure 2 (relative clause construction) is virtually absent, appearing only in the GUM corpus with a minimal frequency of 2.4%.

This extreme consistency across registers suggests that the structural realization of dimensional adjectives is highly conventionalized and relatively insensitive to register variation. Unlike opinion adjectives, which show significant structural adaptation to different communicative contexts, dimensional adjectives maintain a strong preference for attributive position regardless of register.

The contrast between the register sensitivity of opinion adjectives and the register stability of dimensional adjectives is particularly evident in the EWT corpus. While this corpus shows a dramatically different pattern for opinion adjectives compared to other corpora, it maintains essentially the same pattern for dimensional adjectives as other registers. This suggests that register effects on structural choice interact specifically with the semantic properties of evaluative language, rather than affecting all adjective types uniformly.

5. Discussion

5.1. Adjective Type and Structural Preference

The substantial differences in structural distribution across adjective types provide strong empirical support for the existence of semantic constraints on syntactic realization. The findings align with but also extend Kaiser and Wang's (2021) experimental results by demonstrating that not only the perception but also the production of adjectives is influenced by their semantic type.

The high frequency of predicative structures (Structures 2 and 3 combined: 40.2%) for opinion adjectives suggests that speakers and writers tend to explicitly foreground evaluative content as assertions rather than embed them as attributes. This aligns with the semantic nature of evaluative adjectives, which express subjective judgments that may require more explicit attribution and assertion.

In contrast, the overwhelming preference of dimensional adjectives for attributive position (Structure 1: 93.9%) suggests that measurable properties are more commonly integrated directly into noun phrases, potentially reflecting their role in identifying or classifying referents rather than predicating properties of them. This pattern may relate to the more descriptive nature of dimensional properties, which often serve to distinguish or characterize entities rather than to evaluate them.

These findings support theoretical approaches that recognize a systematic relationship between semantics and syntax in adjectival realization. Rather than being arbitrary, the structural choices appear to be motivated by the communicative functions and semantic properties of different adjective types.

5.2. Information Packaging Strategies

The consistent positional patterns observed across adjective types offer insights into information packaging strategies in English. The finding that Structure 1 (attributive position) consistently appears later in sentences than Structures 2 and 3 suggests a general information-structural principle: attributive constructions tend to appear in more complex noun phrases that typically occur later in clauses, while predicative constructions more commonly form the main assertion earlier in sentences.

This positional regularity aligns with principles of information structure where given or background information tends to be integrated into complex referring expressions, while new or asserted information tends to be expressed through predicative constructions (Lambrecht, 1994). The fact that this pattern remains consistent across adjective types suggests that position in sentence reflects general information-structural principles that operate independently of adjective semantics.

However, the interaction between these positional tendencies and the semantic-based structural preferences discussed earlier reveals a nuanced picture of opinion packaging. Opinion adjectives, with their greater tendency to appear in predicative positions (Structures 2 and 3), are more likely to be explicitly asserted as new information and to appear earlier in sentences. This creates a double foregrounding effect where opinions are both structurally and positionally highlighted as the main assertion.

In contrast, dimensional adjectives, with their strong preference for attributive position (Structure 1), tend to be embedded within noun phrases later in sentences, effectively backgrounding them as presupposed or given information. This creates a double backgrounding effect that presents dimensional properties as established rather than asserted facts.

These patterns suggest that speakers and writers have access to multiple strategies for packaging opinions, ranging from explicit assertion to implicit presupposition, with different adjective types showing different tendencies along this continuum.

5.3. Register Variation and Communicative Function

The notable corpus-specific variations observed, particularly for opinion adjectives in the EWT corpus, highlight the importance of register in shaping linguistic choices. The finding that web language (EWT) shows a higher frequency of predicative structures for opinion adjectives (Structure 3: 55%) compared to more varied registers (GUM: 29%, LinES: 27%) suggests that the communicative functions of different text types influence how opinions are packaged.

Web language, which often includes reviews, social media posts, and forum discussions, frequently has an explicitly evaluative purpose where opinions are the primary content being communicated. In such contexts, the explicit assertion of opinions through predicative constructions (e.g., "The movie was amazing") aligns with the communicative goal of expressing personal evaluations.

In contrast, more varied registers such as academic, fiction, and news texts (represented in the GUM and LinES corpora) often have informational rather than evaluative primary purposes. In these contexts, opinions may be more commonly embedded within noun phrases (e.g., "the amazing performance") as part of more complex informational content.

The fact that dimensional adjectives maintain their strong preference for attributive position even in web language suggests that register effects interact specifically with evaluative content (and no need to hide it), further supporting the special status of opinion adjectives in linguistic packaging strategies.

These findings align with register theory (Biber & Conrad, 2019), which posits that linguistic features vary systematically according to situational context and communicative purpose. Our results extend this understanding by demonstrating that register effects on structural choice may be category-specific, with opinion adjectives showing greater sensitivity to register variation than dimensional adjectives.

5.4. Theoretical Implications

The empirical patterns identified in this study have several important implications for linguistic theory:

First, they provide corpus-based support for a systematic relationship between semantics and syntax in adjective realization. The different structural preferences of opinion, dimensional, and objective adjectives suggest that semantic properties constrain syntactic possibilities in non-random ways.

Second, the findings support information-structural approaches to syntax, demonstrating that adjective placement correlates with positional patterns that reflect general principles of information packaging. The consistency of these patterns across adjective types suggests that information structure operates as an independent factor alongside semantics in shaping syntactic choices.

Third, the register-specific variations observed, particularly for opinion adjectives, support functionalist approaches that recognize the influence of communicative purpose on grammatical choices. The greater sensitivity of opinion adjectives to

register variation suggests that pragmatic factors may interact differently with different semantic categories.

5.5. Practical Applications

The findings of this study have several practical applications across different domains. In computational linguistics and natural language processing, our results can inform opinion mining and sentiment analysis algorithms by highlighting the importance of syntactic structure in identifying and weighing evaluative content. The finding that opinion adjectives appear in different syntactic environments than dimensional or objective adjectives provides potentially valuable features for automated opinion detection and classification systems.

For discourse analysis, the documented patterns offer empirical evidence for how opinions are strategically packaged in different contexts. The register-specific variations we observed, particularly in web language, can inform analyses of how different discourse communities express and position evaluative content.

In language teaching, our findings suggest the value of explicitly addressing the relationship between adjective semantics and syntactic realization. Teaching materials could incorporate awareness of how different structures (attributive vs. predicative) can affect the perception of opinions, helping learners develop more nuanced control over how their evaluations are expressed and perceived.

The systematic patterns identified may help translators preserve not only the semantic content but also the information-structural properties of adjectives when moving between languages. Understanding how structural choices influence the foregrounding or backgrounding of opinions can inform more faithful cross-linguistic transfers of evaluative content.

5.6. Limitations and Future Directions

While this study provides valuable insights into the relationship between adjective semantics and syntactic realization, several limitations should be acknowledged:

The small sample size for objective adjectives (NO_OPINION dataset: n=5) limits the reliability of conclusions drawn about this category. Future research should expand the analysis to include a wider range of objective adjectives to enable more robust comparisons across all three semantic types.

The focus on English limits the cross-linguistic generalizability of our findings. Future studies should extend this analysis to typologically diverse languages to determine whether the patterns observed are language-specific or reflect more universal tendencies in opinion packaging.

The selection of specific lexical items to represent each semantic category introduces potential confounds related to individual adjective properties beyond their semantic type. Future research could employ a larger and more diverse set of adjectives within each category to mitigate this limitation.

The analysis focused primarily on written language, with limited representation of spoken discourse. Expanding the investigation to include more spontaneous spoken language could reveal additional patterns in how opinions are expressed in interactive contexts.

Additionally, several promising directions for future research emerge from our findings:

1. Diachronic analysis: Investigating how the distribution of structures across adjective types has changed over time could provide insights into the historical development of opinion packaging strategies.
2. Experimental validation: Combining corpus findings with experimental methods could test whether the production patterns observed correlate with perceptual effects, potentially reconciling production and perception data.
3. Cross-linguistic comparison: Extending the analysis to languages with different adjectival systems could reveal whether the semantic-syntactic correlations identified are language-universal or specific to English.
4. Multimodal analysis: Examining how syntactic packaging of opinions interacts with prosodic features in spoken language or typographic features in written language could provide a more comprehensive understanding of opinion expression.
5. Individual and sociolinguistic variation: Investigating whether different speaker groups or individuals show different patterns in their structuring of opinion could reveal sociolinguistic dimensions of opinion packaging not captured in the present analysis.

6. Conclusion

This study has provided systematic corpus-based evidence for the relationship between adjective semantics, syntactic structure, and register variation in English. Our analysis of three syntactic structures across three semantic types of adjectives reveals significant patterns in how opinions are linguistically packaged in authentic language use.

The findings demonstrate that different semantic types of adjectives show distinct structural preferences: opinion adjectives exhibit greater syntactic flexibility with substantial representation in both attributive and predicative positions, while dimensional adjectives show an overwhelming preference for attributive position. These patterns align with but also extend experimental findings on the perception of adjective subjectivity, suggesting a systematic relationship between semantics and syntax in adjectival realization.

Our positional analysis revealed consistent patterns across adjective types, with attributive constructions typically appearing later in sentences than predicative constructions. This consistency suggests that information-structural principles operate independently of adjective semantics, creating a layered system

where both semantic type and information structure influence how opinions are packaged.

Register variations, particularly in web language, demonstrated that communicative context also shapes structural choices, with opinion adjectives showing greater sensitivity to register than dimensional adjectives. This finding highlights the interaction between pragmatic factors and semantic properties in determining syntactic realization.

Collectively, these results support a model where the linguistic packaging of opinion is shaped by multiple interacting factors: the semantic properties of the adjective, general principles of information structure, and the communicative functions of different registers. This complex interplay creates a rich system of opinion packaging strategies that speakers and writers can deploy to achieve different rhetorical effects, from explicit assertion to implicit presupposition.

By documenting these patterns empirically, this study contributes to our understanding of the semantic-syntactic interface in English and provides insights into how language users strategically position evaluative content through their linguistic choices. These findings have implications not only for linguistic theory but also for practical applications in computational linguistics, discourse analysis, language teaching, and translation.

Use of AI

The Claude (4.0) LLM model has been used for two specific tasks in this paper. First, the graphs in Figures 1-4 were generated. Second, once the author had written the entire article, Claude was used as an English grammar and spell checker.

Conflict of Interest

There is no conflict of interest.

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