

The Generation and Development of Metaphoric Lexical Meanings of “Brat” from the Perspective of the Working Hypothesis of the Cactus Model

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Abstract

This academic investigation employs Wang Wenbin's Cactus Model of Metaphorical Semantic Change to trace the diachronic development of the lexical item *brat*. Drawing upon corpus evidence from the Corpus of Contemporary American English spanning three decades, the study identifies four distinct semantic interpretations: an ill-mannered child; offspring within professional or military communities; a largely obsolete term for aprons or overalls; and a contemporary descriptor for individuals exhibiting confidence, independence, and hedonism. Analysis reveals a non-linear evolutionary trajectory progressing from textile-related origins through behavioral associations to sociocultural conceptualizations. The metaphorical mechanisms underpinning this transformation are critically examined. The initial semantic shift occurred through physical resemblance, linking fabric artifacts to child behavior. Subsequent transitions leveraged psychological parallels, connecting behavioral traits to social identity within privileged groups. Most notably, the emergence of the modern connotation reflects sociocultural recontextualization, where notions of privilege were abstracted into expressions of individualism under shifting cultural values. The Cactus Model effectively illustrates these dynamics, demonstrating how semantic nodes interrelate through overlapping attributes while remaining rooted in cultural contexts. Findings confirm that lexical evolution is fundamentally driven by cognitive similarity operating within specific cultural milieus. Each semantic stage retains core attributes while developing distinctive identities, validating the model's capacity to map how meanings dynamically expand through metaphor. The study highlights the inseparability of linguistic change from its sociocultural ecosystem, demonstrating the explanatory power of the Cactus framework for lexical semantics.

Keywords: *Semantic Change, Cactus Model, Lexical Semantics, Metaphorical Extension.*

A. Introduction

The evolution of word meanings is a universal linguistic phenomenon and has long been a central topic of scholarly inquiry. Regarding semantic change, Wang Wenbin proposed the Cactus Model of Metaphorical Semantic Change, emphasizing the pivotal role of metaphor in the process of word meaning evolution (Wang, 2001, 2006). According to this model, once a word is coined, its basic meaning tends to expand and extend over time, primarily through metaphorical usage by language users. The Cactus Model offers a novel perspective and methodology for studying semantic change, enabling a comprehensive understanding and analysis of this linguistic phenomenon.

The word *brat*, newly defined in 2024 as “characterized by a confident, independent, and hedonistic attitude”, has been named Collins' Word of the Year 2024. Inspired by Charli XCX's album, *brat* has become one of the most-discussed words of the year. More than just a highly successful album, *brat* has emerged as a cultural phenomenon resonating with people globally,

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with the concept of “brat summer” establishing itself as both an aesthetic and a lifestyle (Collins English Dictionary, n.d.). As a term originally denoting a mischievous or ill-behaved child, brat carries multiple metaphorical meanings, aligning to some extent with the requirements of this study.

In the Collins English Dictionary, brat is currently listed with three entries: ① a child, esp one who is ill-mannered or unruly: used contemptuously or playfully ; ② the son or daughter of a person in a professional community, a particular company, the armed forces, etc. ; ③ an apron or overall. However, in recent years, brat has developed a new sense beyond its existing entries (Collins English Dictionary, n.d.). It is increasingly used to describe individuals who exhibit confidence, independence, and a hedonistic attitude in their appearance, behavior, and speech. This paper combines diachronic statistics and analysis of brat’s semantic usage based on the COCA (Corpus of Contemporary American English). It maps out the usage patterns and semantic evolution of brat and, subsequently, employs the Cactus Model of Metaphorical Semantic Change to analyze the mechanisms underlying its semantic transformation.

B. Methods

This study adopts a qualitative-descriptive research design grounded in historical and cognitive semantics. The primary aim is to trace the semantic evolution of the lexical item brat over three decades by applying Wang Wenbin’s Cactus Model of Metaphorical Semantic Change (Wang, 2013) as the analytical framework. This model emphasizes the branching, overlapping, and culturally rooted nature of metaphorical meaning expansion, making it particularly suitable for analyzing diachronic semantic shifts. The design facilitates an in-depth exploration of how metaphorical relations and sociocultural contexts contribute to lexical transformation over time, aligning with the view that language change is both cognitively motivated and culturally embedded (Geeraerts, 2010; Kövecses, 2005).

The research procedure began with data identification and collection from the Corpus of Contemporary American English (COCA), covering the 1990s to the 2020s (Davies, 2008). Instances of the word brat were extracted and chronologically organized by decade to observe diachronic shifts in meaning. Each occurrence was analyzed and coded to determine dominant semantic interpretations within each period. Subsequently, metaphorical trajectories were mapped using the Cactus Model, focusing on transitions driven by physical resemblance, psychological association, and sociocultural recontextualization (Wang, 2013; Lakoff & Johnson, 1980).

Data collection employed digital corpus analysis through COCA, which provides authentic and context-rich language data across various registers, including spoken, fiction, magazine, newspaper, and academic texts. The collected data included contextualized sentences, year of occurrence, source domain, and indicators of semantic shift. This corpus-based method enables the researcher to observe actual usage patterns over time, supporting a usage-based model of meaning development (Bybee, 2010; Hilpert, 2013).

Data analysis was conducted through qualitative semantic interpretation supported by principles from metaphor theory and cognitive linguistics. Each instance of brat was interpreted in its textual context to uncover its semantic function, and then mapped within the semantic network structure of the Cactus Model. The analysis examined metaphorical mechanisms—such as resemblance-based shifts and sociocultural abstraction—underpinning the transformation from textile-related terms to behavioral and identity-based

connotations. To ensure reliability, findings were triangulated with lexicographic sources (e.g., Oxford English Dictionary) and previous studies in historical semantics and metaphor research (Traugott & Dasher, 2002; Allan, 2012).

C. Results and Discussion

1. Working Hypothesis of the Cactus Model

Wang Wenbin posits that the process of semantic evolution is rarely linear or uniform. Instead, it often intertwines radiative and chain-like changes, with radiative transformations overlapping chain-like progressions and vice versa, creating a dynamic interplay where each process incorporates elements of the other (Wang, 2007). Based on this intertwined mode of semantic evolution, Wang proposed the Cactus Model of Metaphorical Semantic Change, as illustrated in the diagram below:

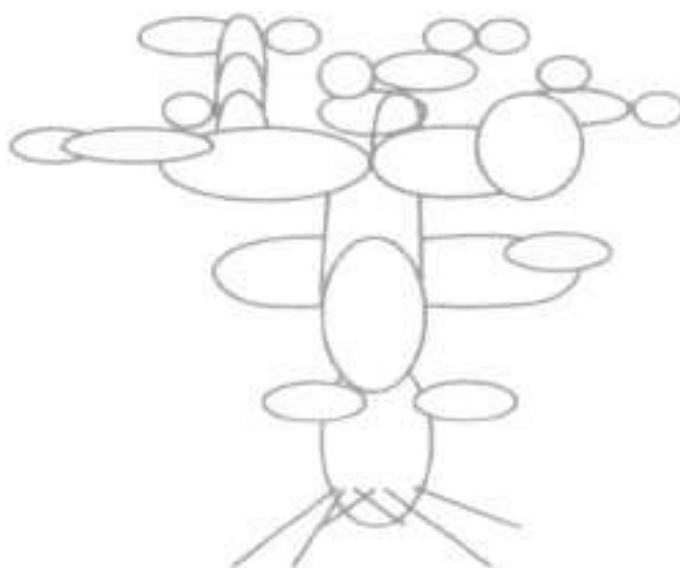


Figure 1. Working Hypothesis of the Cactus Model

In the Cactus Model diagram, the oval at the base represents the basic meaning of a word, serving as the starting point for semantic development. Each oval above the base represents a derived sense, evolving from the basic meaning. This evolutionary process involves an intersection of radiative and chain-like transformations. The lines at the very bottom, resembling cactus roots extending into the soil, symbolize the essential connection between metaphorical semantic development and the socio-cultural environment (Hou & Lu, 2024).

Each oval in the diagram overlaps with adjacent ones, indicating that newly evolved meanings share both similarities and differences with their predecessors. This overlap reflects the interplay between the source domain and the target domain, where similarities form the foundational basis for the metaphorical relationship, even as differences emerge to define the new semantic extensions.

2. Corpus-Based Statistical Analysis and Findings

This study conducts a diachronic statistical analysis of the word *brat* based on data retrieved from the Corpus of Contemporary American English (COCA). It aims to address two primary research questions:

- (1) What are the semantic meanings of the word *brat*?
- (2) What is the trajectory of its semantic evolution?

The research tool employed in this study is the COCA corpus. The Corpus of Contemporary American English (COCA) is a large and “balanced” English-language corpus developed by Professor Mark Davies at Brigham Young University. The COCA corpus is indexed by basic linguistic units, including English words and letters, and offers a variety of search functions such as basic search, advanced search, and contextual search, along with KWIC (Key Word in Context), frequency, and word list tools. The corpus currently contains over 1 billion words from texts spanning the 1990s to the present, encompassing eight genres: spoken language, fiction, popular magazines, newspapers, academic texts, TV and movie subtitles, blogs, and other web content. It is widely used in research fields such as linguistics, English education, lexicography, and related areas.

The methodology employed in this study integrates corpus retrieval, manual screening, and annotation. First, occurrences of the word *brat* in English texts from 1990 to 2019 were retrieved and filtered according to two criteria: invalidity due to non-word usage and exclusion of duplicate instances. Second, the valid corpus data was manually annotated to capture the semantic usages of *brat*. Finally, the annotated data was statistically analyzed to determine the patterns and trajectory of *brat*’s semantic evolution.

3. Statistical Results

This study collected 2,179 instances of the word *brat* from English corpora, of which 1,856 were valid entries, while 323 were excluded as invalid. The usage of *brat* exhibited notable differences across periods. To analyze its semantic development, the study divided the timeline into two phases: 1990–2005 and 2006–2019, and conducted diachronic statistical and analytical evaluations of its semantic usage.

4.1 Statistical Analysis of *Brat* (1990–2005)

From 1990 to 2005, the corpus yielded 903 instances of *brat*, including 72 invalid entries and 831 valid ones. The diachronic distribution of semantic usage is shown in Table 1.

Table 1. The Diachronic Statistics of *Brat*’s Semantic Usage (1990–2005) in the Corpus

Period		1990–1995	1996–2000	2001–2005
Senses of a dictionary entry	①	272	238	195
	②	22	17	20
	③	2	2	1
	④	44	6	2
Total		350	263	218

As shown in Table 1, Sense ①, meaning “a child, especially one who is ill-mannered or unruly”, was the most frequently used, followed by Senses ② and ④. In contrast, Sense ③, referring to “an apron or overall”, was used extremely rarely and almost disappeared during this period. Despite being the original meaning of *brat*, as evidenced by its etymology, Sense ③ appears to have been nearly “abandoned” in the process of semantic evolution. Notably, the usage frequency of Sense ④ declined significantly over this period.

4. Statistical Analysis of Brat (2006–2019)

From 2006 to 2019, the corpus yielded 1,276 instances of brat, of which 1,025 were valid, while 251 were invalid. After manual annotation and statistical analysis, the distribution of semantic usage is shown in Table 2.

Table 2. The Diachronic Statistics of Brat's Semantic Usage (2006–2019) in the Corpus

Period		2006–2010	2011–2015	2016– 2019
Senses of a dictionary entry	①	272	456	126
	②	22	139	13
	③	2	0	0
	④	44	56	26
Total		350	651	165

As Table 2 indicates, from 2006 to 2019, Sense ① remained the most frequently used, followed by Sense ② and Sense ④. Sense ③ was nearly obsolete during this period, showing no recorded instances in the past decade.

Among the four senses of brat, Sense ①, “a child, especially one who is ill-mannered or unruly” is the most prevalent, which can be attributed to its broad application in everyday life. This sense is commonly used to describe misbehaving children, reflecting the emotional responses of parents, teachers, or other adults, often with a playful or critical tone. Its frequent usage is reinforced by the recurring portrayal of unruly children in families, schools, and popular media. Sense ②, referring to “the child of a person in a professional community, particularly in the military”, ranks second in frequency. This usage is common in military families, where children often experience unique life circumstances and develop a distinctive identity due to frequent relocations, sustaining the term’s relevance in certain social groups. Sense ④, describing individuals characterized by confidence, independence, and hedonism, is less frequently used. This sense stems from specific cultural contexts, such as the “Brat Pack” of the 1980s. While it retains niche usage in discussions of historical trends or celebrity culture, its cultural influence has gradually waned over time. Sense ③, meaning “an apron or overall”, has almost entirely fallen out of use in recent decades. This sense, once present in earlier stages of English, has likely been replaced by modern terminology for clothing, reflecting changes in fashion and technology. In summary, differences in semantic usage frequencies arise from a combination of factors, including cultural evolution, linguistic innovation, and shifts in social life.

5. Analysis Results

Based on the above analysis, the word brat encompasses four semantic meanings: ①a child, especially one who is ill-mannered or unruly, often used with a connotation of contempt or humor; ②the child of a person belonging to a specific community, such as professional groups, companies, or the military, often implying certain privileges or behavioral traits; ③originally referring to fabric, particularly cloaks or coverings used by children, later extended to aprons or overalls, likely through associations with items related to children’s activities; and ④describing individuals who exhibit a confident, independent, and hedonistic attitude. The chronological order of these meanings is ③→①→②→④.

Metaphorical semantic evolution is driven by similarity. The analysis reveals a direct link between meanings ③ and ①, as the word initially referred to fabric or cloaks for children, which evolved to denote ill-mannered or unruly children through metaphorical transfer based on shared associations with children. Similarly, a connection exists between meanings ① and ②, as both describe groups with specific behavioral or social attributes. The transition from meanings ② to ④ satisfies the metaphorical semantic evolution requirement of similarity, involving distinct behavioral or social characteristics of groups. However, there is no direct similarity between meanings ③ and ④, indicating that ④ did not derive directly from ③.

Analyzing these developments within their corresponding sociocultural contexts reveals that the evolution from ② to ④ was influenced by shifts in societal perceptions of individuality, self-expression, and acceptance of such behaviors. Thus, the semantic trajectory of *brat* is as follows: ③→①→②→④.

6. The Metaphorical Mechanism of Brat's Semantic Evolution

Similarity is the foundation of metaphorical semantic evolution, forming the relationship between source and target domains. According to Wang Wenbin, metaphorical similarity primarily comprises physical similarity—objective shared characteristics—and psychological similarity—subjective shared traits. Based on the trajectory of *brat*'s semantic evolution and the Cactus Model of Development, the metaphorical mechanism of *brat*'s semantic evolution can be represented as follows:

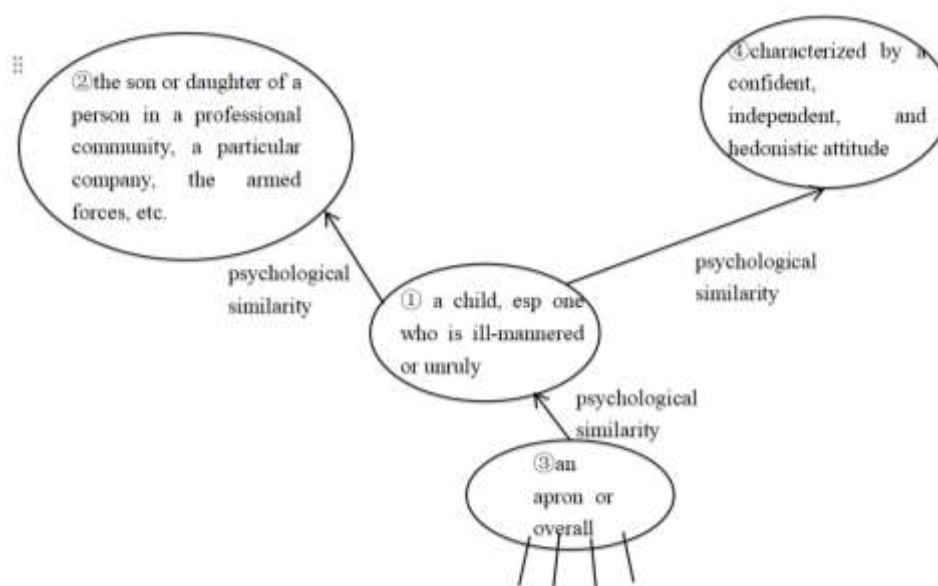


Figure 2. The Metaphorical Mechanism of Brat's Semantic Evolution

Based on the analysis above, it is evident that the semantic evolution of the word *brat* is primarily driven by metaphorical mechanisms, characterized by a predominantly sequential progression interspersed with occasional cross-like changes. *Brat* encompasses four distinct senses: ① a child, particularly one who is ill-mannered or unruly, often with a tone of contempt or humor; ② the child of individuals within specific communities, such as professional groups, companies, or the military, often implying certain privileges or distinctive behaviors; ③ originally referring to fabric, especially cloaks or coverings used by children, later extended to aprons or overalls, possibly related to items associated with children's activities; and ④

describing individuals who exhibit a confident, independent, and hedonistic attitude. The evolution of these meanings can be understood in several stages.

The initial stage involves the transition from sense ③ to sense ①. Originally denoting fabric or cloaks closely associated with children, sense ③ underwent a metaphorical shift to describe ill-mannered or unruly children, reflecting a direct metaphorical connection between objects and people. In practical applications, brat is commonly used to describe children who misbehave or display rude attitudes. For instance, in daily life, parents might admonish: “Stop acting like a brat!” This metaphorical transformation is rooted in the comparison between children’s clothing as external characteristics and their behavior, highlighting the societal role of metaphor as a representation of changing perceptions of children’s roles (Lakoff & Johnson, 1980).

The evolution from sense ① to sense ② illustrates how metaphorical connections are influenced by social and cultural contexts. Children exhibiting specific behaviors due to family background or social status may display distinct traits, with their privileged position leading to metaphorical descriptions. In this context, brat describes children from privileged backgrounds or those with specific social behaviors. For example, the phrase “The bratty kids of the rich families often get away with bad behavior” implies not only unruly behavior but also the privilege associated with social class and family background. This evolution from sense ① to sense ② reflects psychological similarity, where societal perceptions of behavior and identity influence language evolution, particularly as behavioral traits become linked with social status (Sweetser, 1990).

The transition from sense ② to sense ④ is deeply influenced by changes in societal values, especially concerning individualism, freedom, and hedonistic attitudes regarded as markers of success and self-realization in modern Western culture. In this cultural context, the term brat acquires a positive connotation, describing individuals who are confident, independent, and hedonistic. For instance, in media and entertainment, brat is used to depict adventurous and self-assured youths: “She’s a brat with a taste for the good life”. In this phase, the privileges and behavioral traits of sense ② are abstracted into expressions of freedom and independence, reflecting a more accepting societal view of self-expression and lifestyle choices. This metaphorical outward shift conveys the broader societal acceptance of individualism and personality (Gibbs, 1994).

In summary, the progression from sense ③ to sense ① reflects the metaphorical evolution from objects to personal attributes, the shift from sense ① to sense ② illustrates the metaphorical mapping of behavioral traits to social identity, and the transformation from sense ② to sense ④ reveals the influence of sociocultural backgrounds on individual behavior perception. Each stage of semantic evolution demonstrates the interplay of psychological similarity and sociocultural dynamics in language development.

D. Conclusion

This study, utilizing the COCA corpus, investigates the semantic evolution and metaphorical mechanisms of the word brat. The findings indicate that brat encompasses four semantic meanings, with an evolutionary trajectory of: ③→①→②→. This process is primarily chain-like, with certain cross-like variations. The analysis of metaphorical mechanisms reveals that the evolution from sense ③ to sense ① involves metaphorical transformation from objects to human attributes, where external characteristics related to children in sense ③ are mapped to behavioral traits in children, thus forming sense ①. The

transition from sense ① to sense ② is based on psychological similarity between behavioral traits and social identity, where the unruly child in sense ① is metaphorically projected onto the privileged children of specific social groups in sense ②. The shift from sense ② to sense ④ is influenced by sociocultural changes, as increasing recognition of individuality and independence in society abstracts the privileged traits in sense ② to describe individuals in the modern context characterized by hedonism and independence, thereby forming sense ④.

The study concludes that the metaphorical evolution of *brat* is rooted in psychological similarity, where the source domain (such as fabric or behavioral traits) is mapped onto the target domain (such as child image or social identity) to generate new meanings, significantly influenced by the sociocultural environment. The evolution of *brat* also illustrates that metaphorical change must be grounded not only in psychological similarity but also within specific cultural contexts. Each sense demonstrates both commonality and distinctive individuality at specific stages; commonality drives the core of semantic evolution, while individuality reflects the diversity of language development within its sociocultural milieu.

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