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**Cognitive-semantic mechanisms of collective
conceptualization in English animal community
nominations: a corpus-based analysis**

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Abstract: English animal group nouns not only denote groups of animals but also reflect different ways of construing multiple entities as a unified whole, making their role in the conceptualization of collectivity a relevant object of cognitive-semantic research. Although previous studies have examined collective nouns, cognitive profiling, metaphorical extension, and evaluative meaning from different theoretical perspectives, the interaction of these mechanisms in the use of animal group nouns remains insufficiently explored. The present study focuses on six such lexical items – *herd*, *pack*, *flock*, *swarm*, *pride*, and *colony* – and aims to identify the cognitive-semantic mechanisms underlying their literal and metaphorically extended uses. The data were retrieved from the Corpus of Contemporary American English (COCA) for the period 2010 – 2019. Of the initial 2,563 contexts, 1,804 were retained after manual screening: 773 were classified as literal and 1,031 as metaphorically extended. The methodology involved distinguishing between literal and metaphorically extended uses in accordance with the principles of MIPVU, identifying cognitive profiling parameters, inductively generalizing these parameters into higher-order construal types, and conducting a contextual analysis of evaluative potential. The results show that metaphorically extended uses project selected characteristics of animal group organization onto social, technological, and abstract phenomena. The identified profiling parameters were grouped into four higher-order construal types: Agentive, Passive, Dynamic, and Structural. The analysis suggests that the evaluative tendencies associated with these types emerge through the interaction between the profiled characteristics and the immediate discourse context rather than constituting fixed components of lexical meaning. The study is limited to six selected nominations and COCA data from 2010 – 2019; therefore, the proposed typology should be regarded as an analytical generalization rather than an exhaustive classification. The findings indicate an interrelationship between uniplexing, cognitive profiling, metaphorical extension, and evaluative potential in the conceptualization of collectivity.

Keywords: Animal group nouns; Conceptualization of collectivity; Lexical-semantic field; Uniplexing; Cognitive profiling; Construal types; Metaphorical extension; Evaluative potential

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**Когнитивно-семантические механизмы
 концептуализации коллективности в английских
 номинациях сообществ животных: корпусный
 анализ**

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Аннотация: Номинации сообществ животных не только обозначают множества животных, но и отражают различные способы их осмысления как единого целого, что обуславливает актуальность изучения их роли в концептуализации коллективности. Несмотря на наличие исследования коллективных существительных, когнитивного профилирования, метафорического расширения и оценочной семантики, взаимодействие этих механизмов в употреблении специализированных номинаций сообществ животных остаётся недостаточно изученным. Цель исследования заключается в выявлении когнитивно-семантических механизмов, лежащих в основе буквальных и метафорически расширенных употреблений английских номинаций *herd, pack, flock, swarm, pride* и *colony*. Материал исследования составили контексты, извлечённые из Корпуса современного американского английского языка (Corpus of Contemporary American English. COCA) за 2010 – 2019 гг. Из первоначально отобранных 2 563 контекстов после ручной фильтрации в итоговый корпус вошли 1 804 употребления, из которых 773 были классифицированы как буквальные, а 1 031 – как метафорически расширенные. Методика включала разграничение буквальных и метафорически расширенных употреблений с опорой на принципы MIPVU, выявление параметров когнитивного профилирования, их индуктивное обобщение в типы конструирования и контекстуальный анализ оценочного потенциала. Результаты показали, что при метафорическом расширении отдельные характеристики групповой организации животных переносятся на социальные технологические и абстрактные явления. Выявленные параметры профилирования были объединены в четыре типа конструирования: агентивные,

пассивный, динамический и структурный. Результаты анализа позволяют предположить, что связанные с ними оценочные тенденции возникают в результате взаимодействия профилируемых характеристик и контекста, а не являются неизменными компонентами значения номинаций. Исследование ограничено шестью выбранными номинациями и данными СОСА за 2010 – 2019 гг.; поэтому предложенную типологию следует рассматривать как аналитическое обобщение, а не как исчерпывающую классификацию. Полученные данные указывают на взаимосвязь униплексного конструирования, когнитивного профилирования, метафорического расширения и оценочного потенциала в концептуализации коллективности.

Ключевые слова: Номинации сообществ животных; Концептуализация коллективности; Лексико-семантическое поле; Униплексное конструирование; Когнитивное профилирование; Типы конструирования; Метафорическое расширение; Оценочный потенциал

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Introduction

Language serves as a primary means of conceptualizing and categorizing experience, a view widely shared within cognitive linguistics (Langacker, 1987; Lakoff, 1987). From this perspective, the study of lexical-semantic fields (LSFs) reveals the principles underlying the systemic organization of linguistic knowledge. Of particular interest in this regard are what are referred to in the present study as animal community nominations. For the purpose of the present study, the expression animal community nominations is used as a working umbrella term for lexical units that designate animal collectives. It is not intended to replace established labels such as collective nouns, animal group nouns, or terms of venery, but it serves as a higher-order analytical designation for the broader domain of animal-group naming. The present article examines only a conventional lexical subset of this domain, namely *herd*, *pack*, *flock*, *swarm*, *colony*, and *pride*. Accordingly, the findings are interpreted with reference to this selected subset rather than to the full inventory of animal community nominations in English. These units not only denote forms of plurality but also represent cognitive models of group

organization that shape specific models of interpretation. Within the framework of cognitive linguistics, such terms function as means of conceptualizing collectivity through the cognitive operations of structuring (“carving up”) and construal (Talmy, 2000). A central mechanism in this process is uniplexing, which enables a plurality of individuals to be construed as a unified Gestalt (Talmy, 2000). Consequently, the analysis of these units facilitates the identification of mechanisms underlying the cognitive profiling of collectivity within the investigated lexical-semantic field. This interpretation is consistent with cognitive-semantic approaches that regard meaning as the result of conceptual profiling and the selective structuring of knowledge (Boldyrev, 2014).

Drawing on prototype theory (Rosch, 1978; Lakoff, 1987; Taylor, 2003; Taylor, 2018), this lexical-semantic field exhibits a center-periphery organization. Literal meanings anchored in the biological domain constitute the category’s core, whereas the periphery comprises metaphorically extended uses related to social, technological, and other conceptual domains. This radial organization reflects the gradient structure of the category

while enabling cognitive characteristics associated with collectivity to extend across conceptual domains through cross-domain conceptual mapping (Lakoff & Johnson, 2003). The historical roots of these nominations can be traced to the tradition of *terms of ventry*, documented in *The Book of St. Albans* (1486), which records numerous specialized designations for groups of animals (Lipton, 1977). Although many historical terms have fallen out of use, several have remained part of contemporary English and, as Crystal (2011) observes, continue to serve as productive resources for conceptualizing collective entities beyond the biological domain. Within this broader domain, the present study focuses specifically on six conventional lexical items – *herd*, *pack*, *flock*, *swarm*, *colony*, and *pride* – which provide distinct lexical means of construing animal collectivity. Following Geeraerts's understanding of meaning as encyclopedic knowledge (Geeraerts, 2009), these terms can function as cognitive instruments for conceptualizing both biological and social realities.

Previous studies have provided important insights into individual aspects of collective conceptualization. Research on collective nouns has explained their grammatical and semantic properties through mechanisms such as uniplexing and conceptual unity (Talmy, 2000; Levin, 2001; de Vries, 2021). Studies grounded in Cognitive Grammar have emphasized the role of profiling in shaping different construals of collectivity (Langacker, 1987; Joosten et al., 2007). Other research has examined metaphorical extension and evaluative meaning in discourse, demonstrating how animal-based metaphors contribute to the representation and evaluation of social actors (Musolff, 2016; Hart, 2014). However, these approaches have largely evolved independently and therefore do not explain how these cognitive mechanisms interact within a unified model of collective conceptualization. Consequently, the relationship between uniplexing, cognitive

profiling, metaphorical extension, and evaluative potential remains insufficiently understood.

The present study addresses this gap by integrating uniplexing, cognitive profiling, metaphorical extension, and evaluative potential within a unified cognitive-semantic framework for the analysis of animal community nominations. Based on contemporary evidence from the Corpus of Contemporary American English (COCA), the present analysis investigates how cognitive-semantic mechanisms shape the conceptualization of collectivity in English animal community nominations. To this end, the study pursues three objectives: (1) to delineate the hierarchical organization of the lexical-semantic field of animal community nominations by distinguishing between the Literal Core and the Metaphorical Periphery; (2) to examine how uniplexing and cognitive profiling contribute to the construal of collective entities; and (3) to explore how metaphorically extended uses are associated with recurrent evaluative tendencies in contemporary English discourse.

Accordingly, the study addresses the following research questions:

RQ1. How are the literal and metaphorically extended uses of the selected animal community nominations organized within the proposed Literal Core – Metaphorical Periphery model?

RQ2. How do recurrent cognitive profiling parameters – agency, homogeneity, synchrony, density/intensity, hierarchy, and functional integration – generalize inductively into higher-order construal types?

RQ3. How are the identified higher-order construal types associated with recurrent evaluative tendencies in metaphorically extended uses in contemporary English discourse?

The principal theoretical contribution of the present study lies in the development of an integrated cognitive-semantic framework that explains how uniplexing, cognitive profiling, metaphorical extension, and evaluative potential interact in the

conceptualization of collective entities. Application of the proposed framework to the corpus resulted in the development of a four-type analytical typology (Agentive, Passive, Dynamic, and Structural), which captures the dominant profiling tendencies observed across the analyzed corpus. Rather than constituting an exhaustive classification of collective construals, the proposed typology represents an analytical generalization of the recurrent profiling patterns identified in the present dataset.

Theoretical and Methodological Framework

The present study builds on these theoretical perspectives to propose an integrated cognitive-semantic framework for the analysis of animal community nominations.

Within the framework of cognitive linguistics, animal community nominations function as cognitive instruments that structure the conceptualization of collectivity and govern specific modes of semantic construal. Consistent with the established cognitive-semantic approaches to the lexicon (e.g., Langacker, 1987; Evans & Green, 2006), these nominations are viewed not merely as lexical labels but as cognitively structured lexical units that activate organized conceptual knowledge and support the interpretation of collective entities. Central to this perspective is the notion of construal, which refers to the ability of speakers to conceptualize the same situation in alternative ways (Langacker, 1987; Croft and Cruse, 2004). Linguistic meaning is therefore understood not as a direct reflection of objective reality but as the result of selective conceptualization and cognitive organization. This interpretation is consistent with cognitive-semantic approaches that view meaning construction as a process of conceptualization rather than the retrieval of fixed lexical content (Evans & Green, 2006). From this perspective, these animal units constitute a lexical-semantic field (LSF) organized around a center-periphery architecture, consistent with prototype theory

(Rosch, 1978; Lakoff, 1987; Taylor, 2003; Taylor, 2018) and with psycholinguistic research suggesting that lexical-semantic fields are cognitively organized around core and peripheral structures (Sibul, 2017). The field is modeled as a schematic network in which meaning emerges through configurations of domain linkages, and the position of each unit is determined by its degree of prototypicality and cognitive salience (Langacker, 1987; Taylor, 2003). The core of the category comprises terms anchored in the biological domain, such as *herd*, *pack*, *flock*, *swarm*, *colony*, and *pride*. In contrast, the periphery comprises metaphorically extended uses referring to social, technological, and other conceptual domains. At the superordinate level of categorization, the hyperonym *group* functions as a highly schematic unit that does not profile specific behavioral or structural parameters of collectivity. Collective nouns have been described as a distinctive category that combines conceptual unity with plurality, simultaneously encoding a collection of entities and its interpretation as a single conceptual whole (Tran & Bui, 2021). The primary cognitive mechanism facilitating collective nomination is the operation of uniplexing (Talmy, 2000), which enables a multiplex set of individuals to be construed as a unified Gestalt structure. The group is therefore construed as a coherent cognitive whole rather than as a simple aggregation of individual entities. Collective nouns combine grammatical singularity with semantic plurality, referring to multiple entities while construing them as a unified conceptual whole (Corbett, 2000; Levin, 2001). This dual structure underlies the operation of uniplexing by allowing multiple entities to be construed as a single Gestalt without eliminating awareness of their internal multiplicity.

According to de Vries (2021), collective nouns constitute a hybrid category that combines properties of one-ness and many-ness across different levels of linguistic representation. Collective nouns also exhibit a degree of non-additivity, whereby the

collective is interpreted as more than the sum of its individual members and acquires organizational properties of its own. This observation is closely linked to the notion of individuation, since collective nouns differ in the extent to which individual members remain conceptually accessible within the collective whole. In a related account, Joosten et al. (2007) argue that collective nouns vary in the degree to which individual members remain accessible. Attention may therefore shift between the collective as a whole and its constituent members depending on the dimensions of collective organization being profiled.

The selection of a particular collective term gives rise to a specific mode of semantic construal. Within the framework of Cognitive Grammar, this process involves the profiling of certain conceptual parameters against the backgrounding of others (Langacker, 1987). In this respect, the analyzed animal community nominations may be viewed as providing a skeletal structure that organizes conceptual content and foregrounds salient aspects of group organization, including hierarchy, integration, agency, and dynamicity. This interpretation is compatible with studies suggesting that collective nouns occupy a prominent position within the animacy hierarchy because they are associated with cognitively salient features such as agency, social organization, and coordinated activity (Jie & Liang, 2018). Consequently, animal community nominations do not merely denote plurality but also influence the way collective entities are conceptually interpreted. From this perspective, construal types may be regarded as abstract parameters of cognitive profiling realized through distinct nomination models. Cognitive distinctions in the interpretation of collectivity become particularly evident when the selected animal community nominations are compared with neutral designations of plurality. While specialized models foreground specific structural and behavioral parameters, neutral forms perform a schematic function by designating plurality

without specifying their internal organization (Taylor, 2003; Talmy, 2000). The choice of a nominative model affects the degree of conceptual integration among elements, shifting the interpretation of collectivity from discrete individuals toward a unified Gestalt structure.

The metaphorical extension of animal community nominations is interpreted within the framework of conceptual metaphor theory as a process of mapping in which the structure of the source domain ANIMAL COMMUNITY is projected onto social phenomena, enabling the conceptualization of one domain of experience through another (Lakoff and Johnson, 2003). Animal community nominations therefore function as cognitive models through which characteristics associated with the biological domain serve as the basis for the interpretation of social reality. Beyond cross-domain mapping, metaphorical extension also involves the activation of culturally shared scenarios that structure interpretation and evaluation (Musolff, 2016).

Within the Metaphorical Periphery, this process relies on the interaction of two central cognitive mechanisms: uniplexing (Talmy, 2000), which enables the conceptualization of multiplicity as a unified entity, and construal (Langacker, 1987), which guides the interpretation of social reality through the activation of specific cognitive domains. Within the proposed framework, metaphorically extended uses may give rise to recurrent evaluative meanings through the cognitive profiling of transferred conceptual features. This interpretation is consistent with discourse-oriented approaches to metaphor, which emphasize that metaphorical choices contribute to the construction of particular evaluations and representations of social reality in authentic discourse contexts (Semino, 2008). Following the approach proposed by Zaynuldinov and Quero Gervilla (2025), the evaluative component emerges through the interaction of rational evaluation, expressiveness, and emotionality within culturally conditioned models of perception.

These models include evaluative stereotypes within the framework of frame semantics (Fillmore, 1982; Fillmore & Atkins, 1992) as well as culturally embedded quasi-stereotypes (Teliya, 1996). Given the cultural variability of metaphor (Kövecses, 2005), the evaluative potential of animal community nominations is shaped by the conceptual model activated in discourse. As a result, these nominations function not only as a means of designation but also as an instrument for interpretation and evaluation.

Building on the theoretical perspectives discussed above, the present study proposes an integrated cognitive-semantic framework in which animal community nominations are analyzed through the interaction of uniplexing, cognitive profiling, metaphorical extension, and evaluative potential. Within this framework, animal community nominations are understood as conceptual tools that structure the conceptualization of animal collectives through the interaction of these cognitive mechanisms. The lexical-semantic field of animal community nominations is organized as a hierarchical system comprising a superordinate category centered on the lexeme *group*, the selected lexical subset (*herd*, *pack*, *flock*, *swarm*, *pride*, and *colony*), and a prototypically structured continuum extending from a Literal Core to a Metaphorical Periphery. This framework explains differences among the analyzed nominations through the cognitive profiling of distinct dimensions of collective organization, including hierarchy, coordinated movement, social structure, and collective agency. It also provides the theoretical foundation for the subsequent corpus analysis by guiding the identification of profiling parameters, the derivation of higher-order construal types, and the interpretation of evaluative potential.

Materials and Methods

The empirical analysis was guided by the integrated cognitive-semantic framework proposed in the present study. The framework combines uniplexing, cognitive profiling, metaphorical extension, and evaluative

potential within a unified analytical procedure and serves as the principal interpretive model throughout the analysis. Corpus methods were employed to operationalize the proposed framework through the systematic identification and interpretation of recurrent construal patterns across the analyzed nominations.

The empirical data for the present study were retrieved from the Corpus of Contemporary American English (COCA) (Davies, 2008 – present), a large balanced corpus of contemporary American English comprising naturally occurring texts from multiple discourse registers. The analysis was restricted to corpus texts published between 2010 and 2019 in order to ensure a stable and reproducible dataset while focusing on contemporary language use. All discourse registers available in COCA were included to capture the full range of usage of the analyzed nominations across contemporary American English. Corpus retrieval was based on the syntactic pattern *a X of Y* and focused on six animal community nominations: *herd*, *pack*, *flock*, *swarm*, *colony*, and *pride*. These nominations were selected because they constitute well-established lexical items denoting animal communities while systematically differing in the dimensions of collective organization they profile, including agency, homogeneity, synchrony, hierarchy, intensity, and functional integration. Their semantic diversity provided an appropriate basis for comparative cognitive-semantic analysis within the proposed analytical framework. Restricting the analysis to these six nominations ensured a systematic comparison of recurrent construal patterns within a coherent lexical-semantic field.

The study was deliberately restricted to conventional lexical nouns denoting animal collectives and providing sufficient semantic comparability for systematic cognitive-semantic analysis. Historically specialized terms of venery, such as murder of crows and parliament of owls, belong to a distinct historical naming tradition documented in medieval hunting terminology and later

compilations (Lipton, 1977). Their contemporary lexical status, degree of constructional dependence, and level of conventionalization require a different set of diagnostic criteria and therefore constitute a separate analytical problem. Including such expressions in the present dataset would extend the study from cognitive-semantic profiling to questions of lexical autonomy and categorial status that fall beyond the scope of the present study. The six selected nominations thus constitute a semantically diverse but methodologically coherent subset for examining recurrent dimensions of collective construal.

The initial corpus retrieval yielded 2,563 contexts across the six target nominations. All retrieved contexts were subsequently subjected to manual screening. Contexts were excluded if they contained homonymous non-target uses, fixed idiomatic or phraseological expressions, duplicated concordance lines, metalinguistic discussion, or other occurrences unrelated to the conceptualization of animal communities. The construction a school of was excluded from the outset because of its high degree of semantic homonymy and the predominance of non-target expressions (e.g., *school of thought*, *school of philosophy*), which would have reduced the semantic consistency of the dataset.

Following manual screening, 759 contexts were excluded, resulting in a final manually annotated corpus of 1,804 contexts. Each retained context was then classified into one of two analytical categories. Literal Core comprised 773 contexts referring to actual animal communities, whereas Metaphorically Extended Uses comprised 1,031 contexts in which animal community nominations were applied to human, technological, and abstract referents. The resulting annotated corpus served as the empirical basis for identifying profiling parameters, deriving higher-order construal types, and interpreting the evaluative potential of the analyzed nominations.

The distinction between literal and non-literal uses was informed by the principles of the Metaphor Identification Procedure Vrije Universiteit Amsterdam (MIPVU) developed by Steen et al. (2010). In accordance with the principles of MIPVU, contexts were classified as non-literal when the contextual meaning of the target nomination contrasted with its basic biological meaning while remaining interpretable through comparison with that basic meaning. In the present study, MIPVU was employed solely as an operational procedure for distinguishing literal from non-literal uses and was not intended to differentiate novel metaphors from fully lexicalized figurative meanings. Accordingly, all non-literal corpus instances involving cross-domain comparison with the biological source domain were treated as metaphorically extended uses for the purposes of the present analysis. This operational procedure provided a systematic and transparent basis for annotating corpus instances as either Literal Core or Metaphorically Extended Uses.

The analytical procedure consisted of seven consecutive stages. First, corpus contexts were retrieved from COCA using the syntactic pattern a X of Y for the six selected animal community nominations. Second, all retrieved corpus contexts were manually screened to exclude homonymous non-target uses, fixed idiomatic expressions, duplicated concordance lines, metalinguistic discussion, and other irrelevant occurrences. Third, the retained corpus instances were manually annotated according to the classification procedure described above. Fourth, each annotated context was examined to identify the dominant profiling parameter or parameters foregrounded by the nomination within its immediate discourse context. The principal profiling parameters included agency, homogeneity, synchrony, density/intensity, hierarchy, and functional integration. In reporting representative corpus examples, more specific contextual descriptors, such as reduced individuation, coordinated movement, multiplicity, spatial clustering, territoriality, and collective

identity, were used as interpretive glosses indicating how these broader profiling parameters were realized in particular contexts; these descriptors were not treated as independent coding categories. Fifth, recurring profiling parameters were compared across the annotated corpus and grouped inductively into four higher-order construal types: Agentive, Passive, Dynamic, and Structural. These higher-order categories were derived from recurrent similarities observed in the profiling parameters rather than established a priori. Sixth, all annotated corpus instances were manually coded for evaluative potential. Finally, the resulting construal types and evaluative tendencies were interpreted within the proposed integrated cognitive-semantic framework through the interaction of uniplexing, cognitive profiling, metaphorical extension, and evaluative potential.

The six profiling parameters were operationalized as recurrent dimensions of collective organization: agency as coordinated goal-directed action; homogeneity as collective uniformity and reduced individuation; synchrony as coordinated movement or behavioral alignment; density/intensity as spatial concentration, multiplicity, and interactional intensity; hierarchy as internal status differentiation; and functional integration as systemic interdependence and stable internal organization. These parameters were grouped inductively according to broader dimensions of collective organization: agency was associated with the Agentive construal, homogeneity with the Passive construal, synchrony and density/intensity with the Dynamic construal, and hierarchy and functional integration with the Structural construal. The labels Agentive, Passive, Dynamic, and Structural are used as analytical designations for recurrent higher-order profiling patterns rather than as categories adopted from an existing grammatical typology or as rigid lexical classes.

The corpus annotation was conducted by the first author. Since the dataset was not

independently double-coded, formal inter-annotator agreement statistics could not be calculated. To reduce interpretive subjectivity, the annotation procedure relied on explicit operational criteria. The distinction between literal and metaphorically extended uses was guided by MIPVU principles; cognitive profiling was based on the explicitly defined analytical parameters of agency, homogeneity, synchrony, density/intensity, hierarchy, and functional integration; and evaluative tendencies were identified on the basis of contextual lexical markers in the immediate co-text. Ambiguous cases were repeatedly re-examined against the same analytical criteria to maintain internal consistency. The absence of independent inter-annotator validation is acknowledged as a methodological limitation of the present study.

To examine the evaluative potential of the analyzed nominations, all annotated corpus instances were manually coded using contextual evaluative markers occurring in the immediate co-text. The coding procedure considered adjectival descriptions, verbal predicates, and other lexical indicators associated with recurrent evaluative meanings, including threat, aggression, dependency, prestige, conformity, and depersonalization. When multiple evaluative interpretations were possible, coding was based on the dominant evaluative orientation supported by the immediate discourse context. The identified evaluative markers were subsequently grouped into broader evaluative dimensions through qualitative analysis of recurrent contextual patterns. Particular attention was paid to recurring semantic configurations such as coordinated aggression, intensity, chaotic behavior, social hierarchy, and reduced individuality.

The interpretation of evaluative meanings was informed by the emotional-evaluative semantic framework proposed by Zaynuldinov and Quero Gervilla (2025), which conceptualizes evaluation as the interaction of rational assessment,

emotionality, and expressiveness. Particular attention was also paid to verbal predicates, as verb selection has been shown to provide linguistic evidence for cognitively salient conceptual properties associated with nominal categories (Ji & Liang, 2018). From a prototype-theoretical perspective, verbal predicates may be regarded as linguistic manifestations of conceptual features attributed to a referent, thereby providing additional evidence for the cognitive construal of collective entities.

For comparative purposes, the lexeme *group* was treated as a neutral schematic superordinate category within the lexical-semantic field of animal community nominations. Unlike the analyzed nominations (*herd*, *pack*, *flock*, *swarm*, *colony*, and *pride*), *group* does not itself profile particular dimensions of collective organization such as hierarchy, synchrony, agency, or functional integration. Instead, it serves as a schematic representation of collectivity against which the profiling properties of the analyzed nominations can be systematically compared. Owing to its schematic and non-specialized character, it was not included in the quantitative analysis. Comparison between the analyzed nominations and this neutral marker of plurality made it possible to identify mechanisms of construal, including cognitive profiling, as well as to examine the role of uniplexing, whereby a set of discrete individuals is conceptualized as a unified Gestalt structure (see Table 1).

Overall, the proposed framework applied corpus-based evidence through a sequence of analytical procedures linking uniplexing, cognitive profiling, metaphorical extension, and evaluative interpretation. This integration provides a systematic basis for identifying recurrent construal patterns across Literal and Metaphorically extended uses of animal community nominations.

Results

A typology of Cognitive Construals in Animal Community Nominations

Application of the proposed analytical framework to the annotated corpus revealed a systematic cognitive-semantic organization of the lexical-semantic field of animal community nominations. Corpus instances were annotated as either Literal Core or Metaphorically Extended Uses, reflecting the broader theoretical distinction between the Literal Core and the Metaphorical Periphery proposed in the present framework. The latter encompasses uses in which animal community nominations extend to human, technological, and abstract domains. Across both analytical categories, collective entities are consistently construed as coherent cognitive wholes rather than as simple aggregations of individuals. This recurring pattern reflects Talmy's (2000) notion of uniplexing, whereby multiple entities are conceptualized as a single Gestalt. Furthermore, the analysis indicates that metaphorically extended uses preserve selected characteristics associated with the biological source domain, allowing dimensions of collective organization to remain salient across different domains of use.

Comparative cognitive-semantic analysis of the annotated corpus identified recurrent profiling parameters, including agency, homogeneity, synchrony, density, hierarchy, and functional integration. Rather than constituting isolated semantic features, these parameters consistently converged on broader dimensions of collective organization across the corpus. This analytical generalization formed the basis for the inductive derivation of four higher-order construal types (Agentive, Passive, Dynamic, and Structural) which represent recurrent cognitive patterns of collectivity construal rather than fixed lexical or semantic categories.

Table 1. Inductive Derivation of Higher-Order Construal Types from Recurrent Profiling Parameters

Lexeme	Foregrounded Profiling Parameter(s)	Analytical Generalization	Higher-Order Construal
<i>pack</i>	agency	collective action	Agentive
<i>herd</i>	homogeneity	collective composition	Passive
<i>flock</i>	synchrony	collective dynamics	Dynamic
<i>swarm</i>	density, intensity	collective dynamics	Dynamic
<i>pride</i>	hierarchy	internal organization	Structural
<i>colony</i>	functional integration	internal organization	Structural

Table 1 summarizes inductive derivation of higher-order construal types from recurrent profiling parameters identified in the annotated corpus. Although each nomination foregrounds a distinct profiling parameter, several converge on broader dimensions of collective organization. These recurring patterns provide the basis for the four-type typology presented in Table 2. Selected corpus examples illustrating the analytical categories and recurrent profiling patterns underlying these higher-order construal types are provided in the Appendix.

The first macro-category comprises Agentive and Passive construals, represented by *pack* and *herd* respectively. Although both nominations conceptualize a plurality as a unified Gestalt through uniplexing, they differ substantially in the dimensions of collective organization they emphasize. *Pack* is prototypically associated with social predator groups acting as coordinated units and therefore highlights collective agency, coordination, and goal-directed action. These characteristics remain salient in metaphorically extended uses, where groups of people are frequently construed as unified social actors capable of collective action, often in ways perceived as threatening or antagonistic. *Herd*, by contrast, directs attention away from coordinated action and toward homogeneity, spatial cohesion, and reduced individuation. In metaphorically extended contexts, the nomination tends to background individual differences and highlight collective uniformity, thereby motivating interpretations associated with

conformity, depersonalization, or reduced autonomy. Together, *pack* and *herd* represent two contrasting construals of collectivity: one centered on agency and coordinated action, the other on homogeneity and diminished individuality.

The second macro-category is represented by Dynamic construals, exemplified by *flock* and *swarm*. Unlike Agentive and Passive construals, these nominations conceptualize collectivity primarily through patterns of movement and interaction. *Flock* foregrounds synchrony and coordinated movement, whereas *swarm* emphasizes density/intensity, and potential uncontrollability of collective behavior. The distinction becomes particularly evident in metaphorically extended contexts. Expressions such as *flock* of followers highlight behavioral alignment and dependence, while *swarm* of *drones* and *swarm* of *trolls* foreground overwhelming multiplicity, dynamic expansion, and reduced controllability. Despite these differences, both nominations profile collective dynamics through patterns of movement and interaction. The comparative analysis of the annotated corpus indicates that synchrony and density/intensity function as lower-level profiling parameters within a broader Dynamic construal type.

The third macro-category comprises Structural construals, instantiated by *pride* and *colony*. In contrast to the preceding types, these nominations conceptualize collectivity primarily through internal organization and relatively stable relationships among group

members. *Pride* emphasizes hierarchy, status, and kinship relations, characteristics that frequently remain salient in metaphorically extended uses, where the nomination is associated with prestige, exclusivity, and elevated social standing. *Colony*, by contrast, profiles functional integration, territorial embeddedness, and systemic interdependence. In both literal and metaphorically extended contexts, it tends to construe the collective as a highly integrated system whose members are connected through stable functional relations. Although *pride* and *colony* differ in their dominant profiling parameters, both instantiate Structural construals because they conceptualize collectivity through patterns of internal organization rather than through movement or agency.

The corpus analysis suggests that evaluative potential is not an inherent property of the analyzed lexical items but rather an emergent consequence of cognitive

construal. Evaluative meanings become particularly salient in metaphorically extended uses, where characteristics associated with animal communities are projected onto social or technological entities. In such contexts, the foregrounding of particular dimensions of collective organization contributes to recurring evaluative tendencies. Agentive construals are frequently associated with aggression and hostility, Passive construals with conformity and depersonalization, Dynamic construals with dependence, threat, or chaos, and Structural construals with prestige, stability, or systemic cohesion. The findings suggest that animal community nominations function as mechanisms of cognitive and evaluative profiling, rather than as lexical items with inherently fixed evaluative meanings, thereby shaping the interpretation of collective entities across both literal and metaphorically extended uses.

Table 2. Cognitive Construal Types, Profiling Parameters, and Evaluative Potential

Model group	Lexeme	Construal Type	Key Profiling Parameters	Evaluative Potential
Agentive / Passive	<i>Pack</i>	<i>Agentive</i>	agency, coordination	aggression, hostility
Agentive / Passive	<i>Herd</i>	<i>Passive</i>	homogeneity, depersonalization	conformity, depersonalization
Dynamic	<i>Flock</i>	<i>Dynamic</i>	synchrony	dependence, reduced autonomy
Dynamic	<i>Swarm</i>	<i>Dynamic</i>	density/intensity	threat, chaos
Structural	<i>Pride</i>	<i>Structural</i>	hierarchy, status	prestige, exclusivity
Structural	<i>Colony</i>	<i>Structural</i>	integration, territoriality	stability, cohesion

Table 2 summarizes how the four higher-order construal types identified in the annotated corpus are instantiated by the analyzed nominations and associated with recurrent profiling parameters and evaluative tendencies. The differences among these nominations reflect both their lexical meanings and the recurrent profiling patterns identified in the annotated corpus. Although

all six nominations are grounded in the cognitive operation of uniplexing, which enables multiple entities to be conceptualized as a single Gestalt, the nature of this Gestalt varies according to the parameters that are foregrounded, including agency, synchrony, density, and social hierarchy.

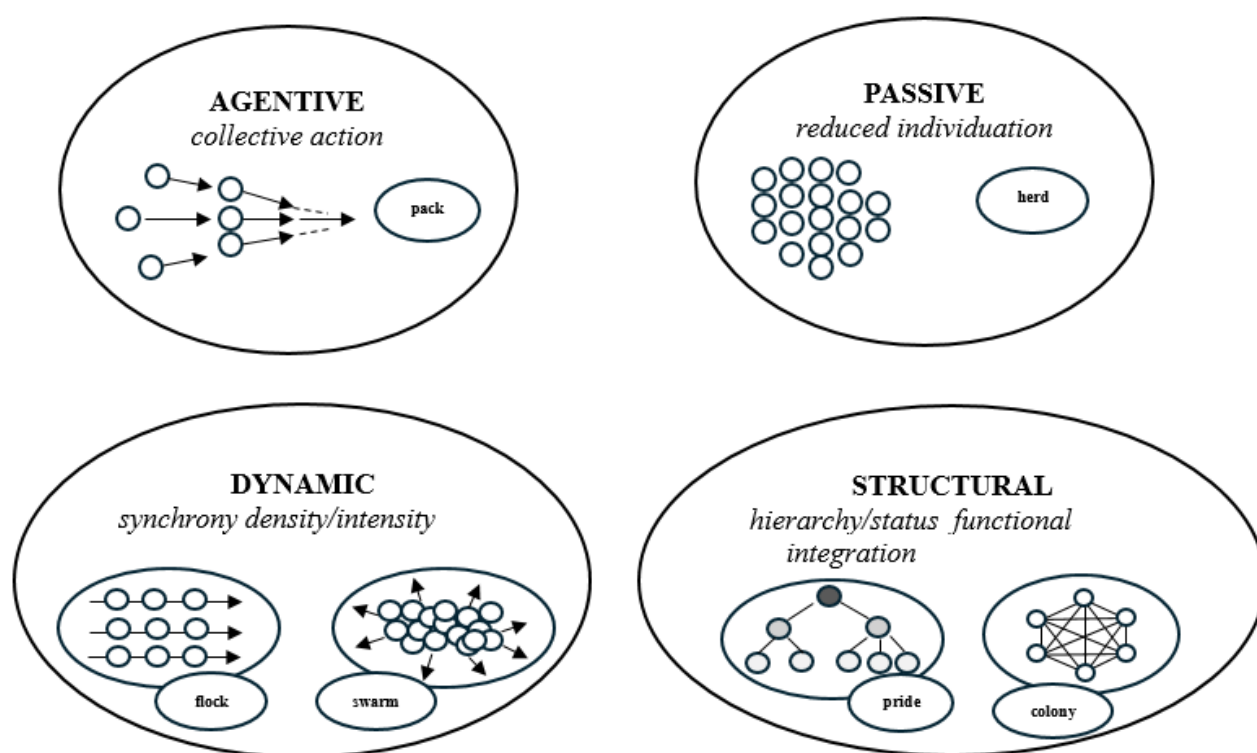
Each nomination reflects a particular construal of collective entities derived from

the recurrent profiling parameters identified during the comparative analysis of the annotated corpus. At a higher level of abstraction, these profiling parameters were grouped inductively into four higher-order construal types: Agentive, Passive, Dynamic, and Structural. The Dynamic construal type encompasses both *flock* and *swarm* because both nominations share a common focus on collective dynamics and patterns of movement and interaction. This higher-order grouping emerged inductively from the recurrent profiling parameters identified in the annotated corpus. Although the two nominations differ in the dominant profiling parameters they foreground, *flock* primarily profiles synchrony whereas *swarm* emphasizes density/intensity. Nevertheless, both construe collectivity through patterns of

movement and interaction. Accordingly, synchrony, density/intensity are interpreted as lower-level profiling parameters subsumed within the broader Dynamic construal type rather than as independent higher-order construal types.

Within the proposed framework, the six analyzed nominations instantiate the four higher-order construal types derived from recurrent profiling parameters identified in the annotated corpus. Specifically, *pack* represents the Agentive construal, *herd* the Passive construal, *flock* and *swarm* the Dynamic construal, and *pride* together with *colony* the Structural construal. Figure 1 summarizes the relationships between the higher-order construal types and their dominant profiling parameters.

Figure 1. Relationship between Profiling Parameters and Higher-Order Construal Types



Note. The figure summarizes the dominant profiling parameters associated with each higher-order construal type derived from the annotated corpus: collective action (Agentive), reduced individuation (Passive), synchrony and density/intensity (Dynamic),

and hierarchy/status and functional integration (Structural).

These distinctions among the four higher-order construal types become particularly evident in metaphorically extended uses, where cognitive characteristics

associated with the biological source domain motivate evaluative interpretations in human, technological, and abstract target domains. Through these profiling operations, animal community nominations contribute to the conceptualization and categorization of collective entities across both Literal Core and Metaphorically Extended Uses by foregrounding different dimensions of collective organization. The proposed higher-order construal types therefore demonstrate that these nominations function as mechanisms of cognitive profiling that shape both the conceptualization of collective entities and their evaluative interpretation in discourse.

The differences summarized in Figure 1 become particularly apparent when the analyzed nominations are compared with neutral expressions of plurality. A comparison between the analyzed animal community nominations and neutral expressions of plurality further highlights differences in the construal of collectivity. For instance, the expression *a pride of lions* profiles social hierarchy and kinship relations, whereas the expression *a group of lions* provides a comparatively neutral representation of collective membership. Similarly, *a herd of cattle* evokes a high degree of conceptual integration and reduced individuation, while the plural noun *cows* preserves the perception of separate individual entities. The analyzed nominations therefore shift attention from individual members to the collective as a unified conceptual entity while simultaneously emphasizing specific properties of collective organization. These evaluative interpretations emerge from encyclopedic knowledge associated with the biological source domain and become particularly salient in metaphorically extended uses, where this knowledge contributes to the interpretation of human, technological, and abstract collectives.

Taken together, the findings indicate that animal community nominations function not simply as linguistic markers of plurality but as cognitive mechanisms for construing

and profiling collective entities. The identified construal types differ in the dimensions of collective organization they profile, including agency, homogeneity, collective dynamics, and structural organization. Through these profiling operations, collective nominations contribute to both the conceptual representation and the evaluative interpretation of groups across literal and metaphorical contexts. The proposed typology further suggests that recurring evaluative meanings are systematically associated with specific construal types, providing a systematic connection between cognitive profiling and evaluative potential.

The Superordinate Expression *a group of*

For comparative purposes, *group* served as a neutral schematic reference category against which the six analyzed animal community nominations were compared. Unlike *herd*, *pack*, *flock*, *swarm*, *pride*, and *colony*, it does not itself profile particular dimensions of collective organization, such as agency, hierarchy, functional integration, or intensity. Instead, it provides a semantically underspecified conceptualization of plurality that enables the profiling properties of the analyzed nominations to become more apparent. Owing to its extreme frequency and semantic generality, this expression was not included in the quantitative corpus analysis, because its extreme frequency and semantic generality make it unsuitable for direct comparison with the six target nominations. Instead, it is treated as a reference category for cognitive-semantic comparison.

Comparison with the annotated corpus demonstrates that lexical choice itself functions as a mechanism of cognitive profiling. Whereas *group* evokes a general notion of collectivity without specifying its internal organization, the analyzed nominations systematically foreground distinct dimensions of collective organization. Thus, *a herd of animals* profiles homogeneity and reduced individuation, *a pack of animals* emphasizes coordinated agency, *a flock of followers* highlights behavioral alignment and

dependence, *a swarm of drones* foregrounds intensity and dynamicity, *a pride of lions* profiles social hierarchy, and *a colony of ants* emphasizes functional integration. These semantic differences are grounded not only in lexical meaning but also in the encyclopedic knowledge associated with different models of collective organization.

The identified profiling patterns remain available in metaphorically extended uses, where characteristics associated with animal communities contribute to the conceptualization and interpretation of human, technological, and abstract collectives. Consequently, *group* represents collectivity at a maximally schematic level, whereas the analyzed nominations evoke increasingly specific construals of collective organization through distinct profiling

patterns. These contrasts demonstrate that collective nominations differ not only in their referential scope but also in the cognitive construals they evoke.

To illustrate these differences in the construal of collectivity, Table 3 compares selected animal community nominations with the neutral schematic category *group*.

The neutral expressions in the Table 3 were selected according to the specific cognitive contrast being illustrated. While *group* serves as a neutral superordinate category, plural noun phrases and neutral quantificational expressions are used where necessary to demonstrate the cognitive operation of uniplexing and the additional profiling contributed by the selected nominations.

Table 3. Comparative Cognitive Construal of Collective Nominations

№	Linguistic Model	Neutral Reference Expression	Cognitive Mechanism	Interpretive Effect (Construal)
1	<i>A pride of lions</i>	<i>A group of lions</i>	Uniplexing; profiling of social parameters	<i>Pride</i> motivates the interpretation of a socially organized community characterized by hierarchy and internal social structure, whereas <i>group</i> provides a neutral representation of collective membership.
2	<i>A herd of cattle</i>	<i>Those cows</i>	Uniplexing; reduced individuation	<i>A herd of cattle</i> demonstrates a high degree of conceptual integration, construing individual animals as a unified whole, whereas <i>cows</i> preserves the perception of discrete individual entities.
3	<i>A flock of followers</i>	<i>Those followers</i>	Synchrony profiling	The collective is construed as characterized by dependence, coordinated behavior, and reduced individual autonomy.
4	<i>A swarm of drones</i>	<i>Many drones</i>	Intensity and density profiling	The nomination evokes the image of a dense, dynamic, and potentially threatening mass.

The examples presented in Table 3 demonstrate how the selected animal community nominations shape the cognitive profiling of collectivity in ways that differ from neutral expressions of plurality. Unlike neutral collective expressions such as *group*, *many*, or lexical items denoting individual entities, the analyzed nominations activate additional dimensions of construal beyond those encoded by neutral expressions of plurality, including social hierarchy, behavioral synchrony, interactional intensity, and reduced individuation. The choice of a collective nomination therefore influences not only how a plurality is represented linguistically but also how it is cognitively construed, giving rise to distinct models of collective organization in discourse. The observed interpretive differences are grounded not only in lexical meaning but also in encyclopedic knowledge linked to different models of collective organization. These contrasts further demonstrate that collective nominations function as mechanisms of cognitive profiling within the lexical-semantic field of animal community nominations, directing attention to particular dimensions of collective organization and motivating distinct interpretations of collective entities across both Literal Core and Metaphorically Extended Uses.

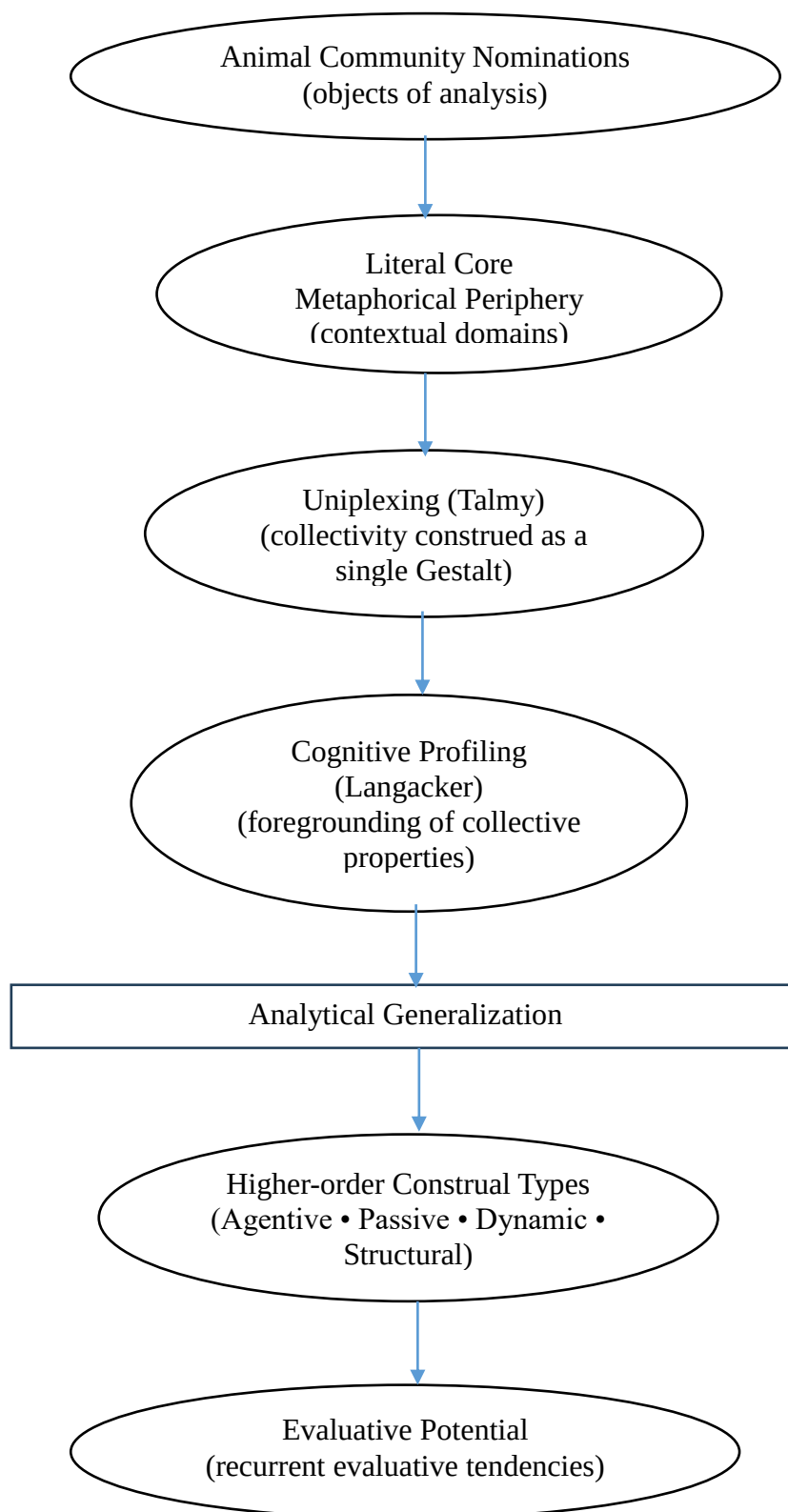
The comparative analysis further demonstrates that analyzed nominations differ systematically in the dimensions of collective organization they foreground. These differences are reflected not only in their construal patterns but also in their evaluative potential. The corpus data indicate recurrent associations between particular construal types and evaluative tendencies, suggesting that the analyzed nominations function as mechanisms of both cognitive and evaluative profiling. Rather than constituting isolated

observations, these findings form an integrated explanatory framework of collective conceptualization. The proposed cognitive-semantic model synthesizes the relationships identified in the annotated corpus by integrating uniplexing, cognitive profiling, higher-order construal types, metaphorically extended uses, and evaluative potential into a unified explanatory model, as illustrated in Figure 2.

Figure 2 presents the integrated cognitive-semantic model proposed in the present study. Unlike tables 1 and 2, which summarize the empirical findings of the corpus analysis, the figure integrates these findings into a unified explanatory model linking uniplexing, cognitive profiling, higher-order construal types, metaphorically extended uses, and evaluative potential. The hierarchical structure reflects the transition from the superordinate level of categorization, represented by the neutral schematic category *group*, to the analyzed nominations. Within the framework of Cognitive Grammar, *group* functions as a maximally schematic reference point that neither imposes a particular construal nor foregrounds specific dimensions of collective organization.

The transition from neutral reference to evaluative interpretation is mediated by a sequence of cognitive operations. The first stage involves uniplexing, through which a plurality of entities is construed as a unified Gestalt. Once collectivity has been conceptualized as a single cognitive entity, cognitive profiling foregrounds particular dimensions of collective organization. Based on the recurrent profiling parameters identified in the annotated corpus, four higher-order construal types were derived inductively: Agentive, Passive, Dynamic, and Structural.

Figure 2. Integrated Cognitive-Semantic Model of Collective Construal in Animal Community Nominations



These categories constitute an analytical typology based on recurring profiling patterns observed in the corpus data. They should be understood as dominant profiling tendencies rather than rigid semantic classes. Individual nominations may foreground multiple dimensions simultaneously, although each nomination exhibits a dominant profiling tendency that motivates its classification within the proposed typology. Individual nominations instantiate these higher-order construal types by foregrounding dominant profiling parameters while simultaneously backgrounding alternative dimensions of collective organization – such as coordination (*pack*), homogeneity (*herd*), synchrony (*flock*), and density/intensity (*swarm*), and hierarchy or functional integration (*pride*, *colony*) – while backgrounding other features.

The model synthesizes the recurring profiling patterns identified in the corpus and provides a schematic representation of the relationship between cognitive profiling, construal, and evaluative potential. It further captures how biological prototypes in the Literal Core may provide source-domain knowledge for the conceptualization of social and technological entities in the Metaphorically Extended Uses. The analysis suggests that evaluative potential is not an inherent property of the lexical items themselves but emerges through the interaction of cognitive profiling, contextual interpretation, and encyclopedic knowledge associated with the source domain. Such evaluative meanings become particularly salient in metaphorically extended uses, where characteristics associated with animal communities are projected onto social or technological entities.

In these metaphorical uses, the relationship between construal and evaluation is characterized by recurring tendencies observed in the analyzed corpus. Agentive construals (*pack*) are frequently associated with interpretations of aggression and hostility. Passive construals (*herd*) are often linked to conformity and loss of individuality. Dynamic construals (*flock*, *swarm*) may

motivate interpretations of dependency, threat, chaos, or intrusiveness. Structural construals (*pride*, *colony*) are commonly associated with prestige, stability, cohesion, or forms of social organization.

Taken together, the findings suggest a systematic relationship between uniplexing, cognitive profiling, construal types, and evaluative potential. Animal community nominations function not merely as markers of plurality but as mechanisms of cognitive and evaluative construal that shape the interpretation of collective entities across both literal and metaphorical domains.

Particularly noteworthy is the extension of *swarm* into the technological domain. Such extensions were observed in the corpus during the 2010 – 2019 period, particularly in expressions referring to drones, bots, autonomous systems, and online collectives. In expressions such as *swarm of drones*, *swarm of bots*, and *swarm of trolls*, the cognitive schema associated with insect swarms is projected onto autonomous or semi-autonomous technological entities. Core characteristics of the biological prototype – multiplicity, density/intensity of action – are retained; however, the resulting construal becomes more complex through the addition of algorithmic coordination. Unlike biological uses of *swarm*, which are commonly associated with disorder and limited controllability, technological uses often profile a combination of distributed agency and programmed synchrony. The metaphorical extension of *swarm* thus illustrates how a biological model of collectivity can be adapted to contemporary digital and technological forms of organization.

The analysis demonstrates the explanatory value of the proposed analytical framework. By integrating uniplexing, cognitive profiling, metaphorical extension, and evaluative potential within a unified analytical procedure, the framework makes it possible to explain recurrent construal patterns that cannot be fully accounted for when these mechanisms are examined

separately. The resulting four-type analytical typology, derived inductively from recurrent profiling parameters identified in the annotated corpus, provides a systematic cognitive-semantic model for interpreting the organization of animal community nominations and their evaluative tendencies across both Literal and Metaphorical domains.

Discussion

The findings demonstrate that animal community nominations function as cognitive mechanisms of collective construal rather than as neutral markers of plurality. The proposed analytical framework explains this behavior by integrating uniplexing, cognitive profiling, metaphorically extended uses, and evaluative potential within a unified explanatory model. The findings indicate that the choice of nomination influences the conceptualization of a group, facilitating a shift from the perception of individual entities to their interpretation as a unified cognitive unit. In this sense, collective nominations function as mechanisms of conceptual structuring that provide alternative ways of construing collective entities in discourse.

The principal contribution of the present study lies in demonstrating that the interaction between uniplexing, cognitive profiling, metaphorical extension, and evaluative potential can be explained within a unified framework. Within this framework, cognitive profiling links the construal of collectivity established through uniplexing with the emergence of higher-order construal types, thereby providing the basis for interpreting their evaluative potential. More broadly, the proposed framework demonstrates how corpus-based cognitive-semantic analysis can move beyond the description of individual lexical items toward the identification of recurrent mechanisms underlying the conceptualization and evaluation of collectivity.

The results indicate that the Literal Core of the lexical-semantic field is anchored in the biological domain and can be interpreted as exhibiting a high degree of prototypicality.

Metaphorically Extended Uses are organized relative to this prototypical foundation by preserving selected organizational characteristics of the biological source domain while projecting them onto human, technological, and abstract target domains. Compared with the other analyzed nominations, *pride* showed the smallest number of metaphorically extended uses among the six analyzed nominations. Most non-literal occurrences represented idiomatic expression (e.g. *pride of place*), which were excluded during corpus annotation according to the analytical criteria adopted in the present study. Consequently, only a small number of metaphorically extended uses remained eligible for analysis. The remaining metaphorically extended uses consistently preserved the source-domain concepts of social cohesion, hierarchical organization, and collective identity, suggesting that metaphorical extension of *pride* is considerably more restricted than that of the other analyzed nominations. The analysis of Metaphorically Extended Uses further indicates that the evaluative potential of the lexical-semantic field is shaped not only by universal cognitive mechanisms but also by culturally specific evaluative models embedded in a particular linguocultural context. In this respect, evaluative stereotypes and quasi-stereotypes can be regarded as mechanisms of interpretation reflected in actual language use (Fillmore, 1982; Teliya, 1996).

The role of culturally embedded evaluative models becomes particularly apparent when the English corpus data are considered from a broader cross-linguistic perspective. The ethnocultural specificity of secondary nomination is reflected in the variability of associative characteristics attributed to animal images across languages. For example, in Russian cultural conceptualization, the *ram* is conventionally associated with stupidity, whereas the *donkey* is associated with stubbornness. In Spanish, however, both characteristics are conventionally integrated into the image of

burro. Although these examples fall outside the English corpus examined in this study, they illustrate the broader role of cultural conceptualization in shaping evaluative associations. Such differences demonstrate that animal-based associations are culturally specific and reflect distinct patterns of cultural conceptualization. These observations are consistent with Kövecses's account of cultural variation in metaphorical conceptualization.

From this perspective, the evaluative potential of English collective nominations appears to emerge through the interaction of universal cognitive mechanisms, particularly uniplexing and cognitive profiling, with culturally entrenched evaluative models. Consequently, English collective nominations such as *herd*, *pack*, and *swarm* evoke evaluative interpretations that are grounded not only in lexical meaning but also in the encyclopedic knowledge associated with particular models of collective organization.

The findings are consistent with Langacker's Cognitive Grammar, according to which linguistic expressions impose particular construals on the situations they represent (Langacker, 1987). This observation suggests that lexical choice itself functions as a cognitively meaningful act of categorization rather than as a purely referential selection. The comparison between the analyzed nominations and the superordinate expression *a group of* demonstrates that these forms are not interchangeable but systematically profile different dimensions of collective organization. Unlike the highly schematic lexeme *group*, the analyzed nominations selectively foreground organizational properties that guide both the conceptualization and subsequent evaluation of collective entities. These findings demonstrate that collective nominations function not merely as labels for groups but as mechanisms of selective cognitive profiling that shape the interpretation of collectivity and the evaluative perception of social actors. This interpretation is consistent with discourse-oriented approaches to metaphor and media discourse, which emphasize that

linguistic choices contribute to the construction of evaluations and representations of social reality in authentic discourse contexts (Semino, 2008; Hart, 2014; 2021)

Beyond lexical categorization, the present findings also contribute to broader cognitive theories of collective representation. In this respect, the present findings are compatible with Tomasello's (2019) account of collective intentionality. Although the present study does not investigate intentionality directly, the construal of multiple individuals as a unified collective Gestalt appears consistent with broader cognitive mechanisms through which groups are conceptualized as coherent social entities. Animal community nominations can therefore be understood not simply as labels for collective referents but as linguistic resources that facilitate the interpretation of groups in terms of social coordination, shared organization, and collective identity. While Tomasello's account helps explain the conceptualization of collectivity as a coherent social entity, the evaluative interpretation of such collectives requires consideration of the metaphorical scenarios through which these conceptual structures are activated in discourse.

The evaluative potential of animal community nominations can be further explained through Musolff's (2016) notion of metaphorical scenarios. Rather than functioning as simple cross-domain mappings between source and target domains, metaphorical extensions activate culturally shared scenarios associated with particular models of collective organization. Within these scenarios, nominations such as *pack*, *herd*, or *swarm* evoke recurring interpretative patterns associated with coordinated hunting, collective following, or mass movement, thereby shaping their evaluative interpretation in social and technological contexts. Through metaphorical extension, these conceptual structures are projected onto new target domains while remaining connected to the prototypical core of the category through

shared organizational features. Consequently, collective entities may be construed as aggressive, passive, hierarchically organized, or functionally integrated, depending on the cognitive model activated in discourse. These findings further support the proposed analytical framework by demonstrating how cognitive profiling interacts with culturally shared metaphorical scenarios in guiding both the conceptualization and evaluative interpretation of collectivity.

Digital and Technological Extensions of Collective Construals

A significant finding emerging from the corpus analysis is the extension of animal community nominations beyond their biological origins into technological and digital domains. This tendency is clearly observable in the analyzed corpus data, where algorithmic and networked systems are frequently conceptualized through collective schemas. Expressions such as *swarm of drones*, *swarm of bots*, and *swarm of trolls* illustrate how traditional models of collectivity are applied to digital and networked environments.

Among the analyzed nominations, *swarm* showed a particularly salient extension into technological and digital domains in the analyzed corpus and therefore serves as an illustrative case of contemporary cross-domain extension. While its Literal Core is anchored in biological collectives, its Metaphorically Extended Uses extend across technological, digital, natural, and astronomical domains. This productivity reflects the schematic nature of the *swarm* model. Unlike nominations that profile more stable forms of collective organization (e.g., *pride*), *swarm* foregrounds dynamic properties such as multiplicity, density, and distributed coordination. These relatively schematic properties enable this construal to be projected onto a wide range of biological, technological, and other collective entities characterized by interactional intensity and rapid expansion.

A related pattern can also be observed in other biologically motivated collective

schemas. Unlike the *swarm* model, which foregrounds movement and density, these extend biological models of social insects to collective decision-making, online communities, and artificial intelligence, illustrating how animal-based schemas increasingly structure the conceptualization of coordinated technological systems.

The technological extension of *swarm* is also associated with a diversity of evaluative tendencies. In the analyzed corpus, expressions such as *swarm of trolls* and *swarm of drones* frequently instantiate negative evaluative meanings that emerge through the interaction of cognitive profiling, contextual interpretation, and source-domain knowledge rather than from the lexeme itself. When characteristics such as density, multiplicity, and reduced controllability are projected onto technological entities, the resulting construal often contributes to interpretations of intrusiveness, disruption, or threat. However, recent developments in assistive technologies suggest that the same collective schema may also be associated with more positive evaluations. This observation suggests that evaluative potential is context-dependent rather than lexically fixed. For example, the SwarmFidget project employs coordinated groups of robots to support emotion regulation and attentional engagement in adults with ADHD (Pulatova & Kim, 2024), illustrating the ontological flexibility of the *swarm* schema and its capacity to conceptualize emerging forms of coordinated technological agency.

The findings indicate that animal community nominations remain productive cognitive resources for conceptualizing new forms of coordinated technological and digital organization, extending well beyond their original biological domain.

Beyond the present dataset, the proposed analytical framework provides a transferable analytical model for investigating additional animal community nominations and related lexical domains of collectivity. Future applications across different corpora, discourse types, and languages may further

refine the proposed analytical typology and evaluate its broader explanatory potential.

Limitations

First, the study was based on a manually annotated qualitative corpus of 1,804 contexts. Although the annotated corpus was relatively large, the analysis itself remained qualitative and focused on identifying recurrent construal patterns rather than establishing statistically generalizable frequency distributions. Second, the empirical analysis was restricted to contemporary English-language data retrieved from the Corpus of Contemporary American English (COCA) and therefore does not necessarily capture patterns occurring in other varieties of English or historical stages of the language. Third, the study was limited to six analyzed animal community nominations retrieved through the syntactic pattern *a X of Y*. Consequently, the proposed analytical typology should be interpreted as an inductively derived explanatory model rather than as an exhaustive classification of all animal community nominations.

A further limitation concerns annotation reliability. Because all corpus instances were coded by a single annotator, formal inter-annotator agreement statistics were not available. Although explicit coding criteria and repeated examination of ambiguous cases were used to reduce interpretive subjectivity, future studies should validate the annotation scheme through independent double coding of a representative subsample and the calculation of inter-annotator agreement statistics.

These limitations do not diminish the contribution of the proposed framework but rather define the scope within which the present findings should be interpreted. Because the proposed analytical framework and typology were developed inductively from the analyzed corpus, their explanatory value has been demonstrated only within the scope of the present dataset. Further validation using independent datasets, additional animal community nominations, and other lexical domains will be necessary to

evaluate the robustness and broader applicability of the proposed framework.

Future Research

The proposed analytical framework also opens several directions for future research. Future studies may extend the proposed framework to additional animal community nominations, other lexical-semantic fields, different discourse types, and cross-linguistic data. Such investigations would provide an opportunity to evaluate the transferability of the proposed analytical typology and determine whether similar construal patterns emerge across languages, discourse contexts, and lexical domains.

A particularly promising direction concerns the continuing metaphorical extension of animal community nominations into technological and digitally mediated forms of collectivity. Expressions such as *swarm of drones*, *swarm of bots*, *hive mind*, and *coordinated AI* system suggest that animal-based models of collective organization are increasingly employed to conceptualize emerging technological systems. Recent research on *swarm* user interfaces likewise indicates that biologically inspired collective behavior is increasingly being adopted as an engineering and design principle for digital and robotic systems (Zhang et al., 2026).

These developments also raise important questions regarding the evaluative consequences of technological metaphorical extension. Another important question concerns whether these emerging technological uses preserve the evaluative tendencies associated with their biological source domains or give rise to new evaluative profiles shaped by contemporary technological discourse. Emerging research on Conversational Swarm Intelligence (Rosenberg et al., 2024) likewise suggests that swarm-based models are becoming increasingly relevant for describing collaborative forms of AI-mediated interaction, providing another potential domain in which the proposed analytical framework may be applied.

Such studies would also provide an opportunity to validate the proposed analytical framework and its analytical typology on independent datasets and determine the extent to which the identified construal patterns remain stable across different lexical domains and discourse types.

Conclusion

The present study has demonstrated that animal community nominations constitute a hierarchically organized lexical-semantic field with a prototypical structure, comprising a Literal Core anchored in biological reference and a Metaphorically Extended Uses extending into social and technological domains. The analysis further showed that collective nominations differ systematically in the dimensions of collective organization they foreground, giving rise to recurrent construal patterns and associated evaluative tendencies.

The application of this framework to the annotated corpus lies in the development of an integrated cognitive-semantic framework that explains how uniplexing, cognitive profiling, metaphorical extension, and evaluative potential interact in the conceptualization of animal community nominations. Application of this framework to contemporary corpus data yielded a four-type analytical typology (Agentive, Passive, Dynamic, and Structural), providing an explanatory model for recurrent construal patterns observed across the analyzed nominations. Rather than constituting an exhaustive classification of collective construals, this typology represents an analytical generalization of the dominant profiling tendencies identified in the analyzed corpus.

Beyond the specific findings of the present study, the results contribute to a broader understanding of collective conceptualization by demonstrating that collective nominations do not simply categorize groups but systematically shape their cognitive interpretation. Rather than functioning as neutral markers of plurality, analyzed animal community nominations foreground distinct dimensions of collective

organization that guide subsequent evaluative construal. The findings further demonstrate that the interaction between uniplexing, cognitive profiling, metaphorical extension, and evaluative potential can be accounted for within a unified analytical model of animal community nominations. Taken together, the proposed framework offers a transferable and reproducible cognitive-semantic model for investigating collective construal across animal community nominations and related lexical domains, thereby extending the analytical potential of corpus-based cognitive-semantic research.

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Appendix. Selected Corpus Examples

ID	Lexeme	Context	Source	Year	Domain	Literal/ Metaphorical	Dominant Profiling Parameter (s)	Construal type	Evaluative Potential
H1	<i>Herd</i>	They're a herd of craven dumb people.	Fox News Channel/ SPOK	2018	Media / Social	Metaphorical	Homogeneity; reduced individuation	Passive	Negative
H2	<i>Herd</i>	A herd of men on the internet attacked her online	Freethought blogs.com/ WEB	2012	Social	Metaphorical	Homogeneity; reduced individuation	Passive	Negative
H3	<i>Herd</i>	A shooting into a herd of resting elephants	Goodreads.c om/WEB	2012	Wildlife	Literal	Homogeneity; reduced individuation	Passive	Neutral
H4	<i>Herd</i>	A herd of cattle stand in the midst of smoke	Rollingstone .com/ MAG	2019	Agriculture	Literal	Homogeneity; reduced individuation	Passive	Neutral
H5	<i>Herd</i>	Getting knocked over on the halls by a herd of students	Teencerebral palsy.com/ BLOG	2012	Social	Metaphorical	Homogeneity; reduced individuation	Passive	Negative
H6	<i>Herd</i>	Was a herd of deer calmly standing	Thisisthepla ce.org / WEB	2012	Wildlife	Literal	Homogeneity; reduced individuation	Passive	Neutral
H7	<i>Herd</i>	A herd of guests watched the proceeding in confusion.	Craphound.c om / WEB	2012	Social	Metaphorical	Homogeneity; reduced individuation	Passive	Negative
H8	<i>Herd</i>	Saw a herd of people stampeding out	Highlights for Children / FIC	2017	Social	Metaphorical	Homogeneity; reduced individuation; intensity	Passive	Negative
H9	<i>Herd</i>	A herd of shoppers stops in front of the store	Esquire / FIC	2018	Social	Metaphorical	Homogeneity; reduced individuation	Passive	Neutral
H10	<i>Herd</i>	You didn't get that respect from a herd of egocentric bureaucrats	A.V. Club/ MAG	2016	Social	Metaphorical	Homogeneity; reduced individuation	Passive	Negative

P1	Pack	A pack of wolves can take down an elk	CBS_Early / SPOK	2010	Wildlife	Literal	Agency; coordinated action	Agentive	Neutral
P2	Pack	A pack of puppies training to become guide dogs	NEWS.com.au	2010	Domestic animals	Literal	Agency; coordinated action	Agentive	Positive
P3	Pack	Another monk meets a pack of hunting dogs	Forcechange.com / BLOG	2012	Hunting / Domestic animals	Literal	Agency; coordinated pursuit;	Agentive	Neutral
P4	Pack	Ann Romney told a pack of reporters	Michellemal.kin.com / NEWS	2012	Media / Politics	Metaphorical	Agency; collective pursuit;	Agentive	Negative
P5	Pack	You get jumped on by a pack of trolls who have a supreme intellect due to the anonymity of the internet	Theblaze.com / BLOG	2012	Internet / Social	Metaphorical	Agency; coordinated aggression	Agentive	Negative
P6	Pack	A pack of teenagers with guns a blazing	Redstate.com / WEB	2012	Social / Crime	Metaphorical	Agency; coordinated aggression; threat	Agentive	Negative
P7	Pack	The MSM giving a pack of criminals a virtual free pass	Talkingpointmemo.com / NEWS	2012	Social/ Crime	Metaphorical	Agency; coordinated criminal activity	Agentive	Negative
P8	Pack	Were hounded by a pack of rabid lawyers	Thetruthaboutcars.com / BLOG	2012	Legal / Social	Metaphorical	Agency; coordinated pursuit; aggression	Agentive	Negative
P9	Pack	Guzman-Feliz was killed in a case of mistaken identity by a pack of 14 men searching for gang rivals.	Fox News / MAG	2019	Social / Crime	Metaphorical	Agency; coordinated pursuit; aggression	Agentive	Negative
P10	Pack	The bus from work was late because it had been pulled over by a pack of police officers	Five Points / FIC	2018	Social / Law enforcement	Metaphorical	Agency; coordinated action	Agentive	Neutral

F1	<i>Flock</i>	Chris and Jo had muscled their way onto a tiny elevator ahead of a flock of children and the lone airport worker tending to them.	The Virginia Quarterly Review / FIC	2017	Social	Metaphorical	Synchrony; coordinated movement	Dynamic	Neutral
F2	<i>Flock</i>	Being highlighted exposed your post to a wide audience and brings you a flock of engaged new readers	En.support.wordpress.com / WEB	2012	Media / Social	Metaphorical	Synchrony; behavioral alignment	Dynamic	Positive
F3	<i>Flock</i>	Sounds like a flock of buzzards	Cowboybyte.com / WEB	2012	Wildlife	Literal	Synchrony	Dynamic	Neutral
F4	<i>Flock</i>	Looks of confusion from a flock of Dutch tourists	Huffingtonpost.com / BLOG	2012	Social / tourism	Metaphorical	Synchrony; behavioral alignment	Dynamic	Neutral
F5	<i>Flock</i>	A flock of motorcycle taxi drivers circumnavigated...maneuvering always to stay in the shade	Peacekeeping / FIC	2017	Social / Transportation	Metaphorical	Synchrony; coordinated movement	Dynamic	Neutral
F6	<i>Flock</i>	A flock of mountain bluebirds who flew up and suddenly caught the sunlight	Philippanycey.com / WEB	2012	Wildlife	Literal	Synchrony; coordinated movement;	Dynamic	Neutral
F7	<i>Flock</i>	The sound of their beating wings like a flock of human hearts	SouthernReview / FIC	2011	Abstract / Emotional	Metaphorical	Synchrony; rhythmic coordination	Dynamic	Neutral
F8	<i>Flock</i>	Struggling to find room for a flock of government-related workers and immigrants	Pittsburg Post-Gazette / NEWS	2015	Religion / Social	Metaphorical	Synchrony (collective movement)	Dynamic	Neutral

F9	<i>Flock</i>	Hope Christian Church has a flock of 3,000	Newsweek / MAG	2010	Religion / Social	Metaphorical	Synchrony; behavioral alignment	Dynamic	Positive
F10	<i>Flock</i>	A flock of girls had started coming to our practices	Bk:BookUnknownAmericans / FIC	2014	Social / Human behavior	Metaphorical	Synchrony; behavioral alignment	Dynamic	Neutral
S1	<i>Swarm</i>	Out of this smoke there came a swarm of locusts	Biblestudytools.com / WEB	2012	Wildlife	Literal	Density/intensity; multiplicity	Dynamic	Neutral
S2	<i>Swarm</i>	Attack you again with a swarm of bats	Eq2.wikia.com / WEB	2012	Wildlife	Literal	Intensity; collective movement	Dynamic	Negative
S3	<i>Swarm</i>	A swarm of black, hooded figures in the distance	Fanfiction.net / WEB	2012	Social / Human behavior	Metaphorical	Density/intensity; reduced individuation	Dynamic	Neutral
S4	<i>Swarm</i>	Amidst a swarm of morning mosquitoes	Ayeast.wordpress.com / WEB	2012	Wildlife	Literal	Density/intensity; multiplicity	Dynamic	Neutral
S5	<i>Swarm</i>	A swarm of overalled ground crew on squat yellow tractors burst forth from rows of steel sheds	Kola / FIC	2019	Aviation / Military	Metaphorical	Synchrony; intensity	Dynamic	Negative
S6	<i>Swarm</i>	A swarm of leeches attacking the children	Comingsoon.net / WEB	2012	Wildlife	Literal	Intensity; multiplicity; collective threat	Dynamic	Negative
S7	<i>Swarm</i>	Briareos from Appleseed engages a swarm of drones	Tvtropes.org / WEB	2012	Technology	Metaphorical	Density/intensity; coordinated activity	Dynamic	Neutral
S8	<i>Swarm</i>	A swarm of trolls can swoop	AmericalBlog.com / BLOG	2012	Digital communication / social media	Metaphorical	Intensity; multiplicity; coordinated activity	Dynamic	Negative
S9	<i>Swarm</i>	A bill that could unleash a swarm of autonomous vehicles on public roads	The Verge / MAG	2018	Technology / Transportation	Metaphorical	Density/intensity; coordinated movement;	Dynamic	Negative

S10	Swarm	Later dissected by a swarm of 24/7 cable programs	OCRegister / NEWS	2019	Media	Metaphorical	Intensity; simultaneous activity	Dynamic	Negative
C1	Colony	A colony of leafcutter ants	Our Planet / TV	2019	Wildlife	Literal	Functional integration; organized habitation	Structural	Neutral
C2	Colony	a Colony of movie buffs reenacted their favorite pictures	NorthAmRev	2018	Social / Culture	Metaphorical	Functional integration; collective identity	Structural	Neutral
C3	Colony	Was now home to a colony of RVs	Nothingbutbonfires.com / WEB	2012	Transportation / Settlement	Metaphorical	Spatial clustering; functional integration	Structural	Neutral
C4	Colony	She catered to a colony of black hookers and pimps	Iceberg Slim: Portait of a Pimp / MOV	2012	Social	Metaphorical	Functional integration; collective identity	Structural	Negative
C5	Colony	There's a colony of creative screenwriters all over LA	STLouis / News	2014	Creative profession / Social	Metaphorical	Functional integration; collective identity	Structural	Positive
C6	Colony	A colony of screaming campers	Hercampus.com / BLOG	2012	Social / Recreation	Metaphorical	Functional integration; spatial clustering	Structural	Negative
C7	Colony	A colony of homeless offenders popped up under Miami's Julia Tuttle Causeway	Newsweek/ MAG	2015	Social / Crime	Metaphorical	Territoriality; collective habitation	Structural	Negative
C8	Colony	A colony of cats has taken up residence	Tripper.blogspot.com / BLOG	2012	Domestic animals	Literal	Functional integration; established habitation	Structural	Neutral
C9	Colony	A colony of homeless sex offenders	Anisfield-wolf.org	2012	Social	Metaphorical	Functional integration; spatial clustering	Structural	Negative

C1 0	<i>Colony</i>	...the powers that be were now some amalgam of the ultra wealthy ... and a colony of superintelligences – or one superintelligence	Analog Science Fiction \$26 Fact / FIC	2019	Technology / AI	Metaphorical	Functional integration	Structural	Neutral
PR 1	<i>Pride</i>	A porcupine walks straight through a pride of lions	L.A. Slasher / MOV	2015	Wildlife	Literal	Hierarchy; collective identity	Structural	Neutral
PR 2	<i>Pride</i>	A pride of kitties	Bk:Palisades Park / FIC	2013	Domestic animals	Metaphorical	Collective identity; status	Structural	Positive
PR 3	<i>Pride</i>	A pride of boutique hotels	Philstar.com	2010	Hospitality	Metaphorical	Status; prestige; collective identity	Structural	Positive
PR 4	<i>Pride</i>	A pride of two six adult females seems to be optimal on the plains	NatGEO / MAG	2013	Wildlife	Literal	Hierarchy	Structural	Neutral
PR 5	<i>Pride</i>	The chambered heart, feeding every useless desire: for anchovies, women, a pride of children.	Witness / FIC	2018	Social / Family	Metaphorical	Collective identity	Structural	Negative