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Learning English bare singulars: Data in the L2 classroom

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ABSTRACT

EN Contrasted with the more typical English bare noun forms of mass and proper nouns, bare singular count nouns comprise a problematic set for many descriptive grammars and thus for many second language learners. Although article usage is one of the trickiest areas of English as a Second Language (ESL) to master, bare noun phrases, and bare singulars in particular, are less emphasized in the English language classroom, where much of the focus is placed on learning to produce articles, not learning to exclude them. To investigate L2 sensitivity to bare singular forms, the distribution of bare and articulated NPs in corpus data is contrasted, nouns appearing most often without articles are tracked, and a survey of L2 grammaticality judgments by adult learners is gathered. Lastly, the combined results of the corpus and survey data are integrated into a lesson on the syntax and pragmatics of bare singular count nouns that is designed for the ESL classroom.

Key words: BARE SINGULARS, ENGLISH ARTICLES, ESL, CORPUS ASSISTED LANGUAGE LEARNING, L1 LANGUAGE TYPES

ES En contraste con las formas nominales indeterminadas del inglés tales como los sustantivos incontables y los nombres propios, los sustantivos contables en singular suponen una dificultad en muchas gramáticas descriptivas y, por ende, para muchos aprendientes de L2. Aunque el uso del artículo es uno de los aspectos más difíciles en el aprendizaje del inglés como L2, las frases nominales no determinadas, en especial los sustantivos indeterminados en singular, no suelen recibir un tratamiento extenso en la clase de inglés, ya que la atención se centra en aprender a producir artículos, no en excluirlos. Con el fin de investigar la sensibilidad de los aprendientes de inglés L2 a las formas singulares indeterminadas de sustantivos ingleses, se contrasta la distribución de las frases nominales indeterminadas y articuladas en un corpus, realizándose un seguimiento de los sustantivos que aparecen con más frecuencia sin artículo, así como un estudio de juicios de gramaticalidad en aprendientes adultos de L2. Finalmente, los resultados combinados de los datos procedentes del estudio y del corpus se integran en una lección sobre sintaxis y pragmática de sustantivos singulares indeterminados diseñada para la clase de inglés como L2.

Palabras clave: SINGULARES INDETERMINADOS, ARTÍCULOS DEL INGLÉS, INGLÉS COMO L2, APRENDIZAJE DE LENGUAS ASISTIDO POR CORPUS, TIPOS LINGÜÍSTICOS COMO L1

IT I sostantivi non numerabili e i nomi propri che si presentano *spogli*, ovvero senza articoli o quantificatori, risultano piuttosto comuni in inglese. Al contrario, i sostantivi singolari *spogli* rappresentano un gruppo problematico per molte grammatiche descrittive e di conseguenza per molti studenti di inglese L2. Sebbene l'uso dell'articolo sia una delle strutture più complesse da padroneggiare nell'inglese come lingua seconda/straniera (ESL), i sintagmi nominali (SN), e nello specifico quelli singolari, sono meno enfatizzati nei corsi di inglese, nei quali l'attenzione è posta sull'abilità di produzione degli articoli e non sulla loro omissione. Per indagare la sensibilità verso forme singolari *spoglie* in lingua seconda (L2), le distribuzioni di SN con e senza articolo sono state messe a confronto in un corpus e sono stati individuati i sostantivi che appaiono più spesso senza articoli. Inoltre, attraverso un questionario somministrato a studenti adulti, sono stati indagati i giudizi di grammaticalità in L2. Infine, i risultati ottenuti dal corpus insieme a quelli ottenuti dall'indagine sono stati integrati all'interno di una lezione sulla sintassi e sulla pragmatica di sostantivi singolari *spogli*, progettata per corsi in ESL.

Parole chiave: SOSTANTIVI SINGOLARI SPOGLI, ARTICOLI IN INGLESE, ESL, USO DEL CORPORE NELL'APPRENDIMENTO DELLA LINGUA, TIPOLOGIE DI L1

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1. Introduction to bare singular count nouns

A perennial problem for learners of English is choosing the correct article form. Learners must first identify whether a noun is mass or count and then decide whether the context requires a definite or indefinite article for the count nouns. An even subtler sub-task involves noticing and mastering the use of bare singular count nouns (BSCNs)—count nouns that occur with neither an article nor a plural morpheme. BSCNs represent an unexpected form for learners or instructors using grammar textbooks, since usually only mass nouns are modeled as appearing bare. It is useful for learners to be made aware of BSCNs not only due to their lack of count-indexing morpho-syntax but also because of their meaning, which is often pragmatically marked (Stvan, 1998, 2007). Previous work on aspects of syntax and of pragmatic inferences created by BSCN use has been based on naturally occurring data, but only that which was opportunistically gathered. Without a more systematic examination of natural data, there has been no way to determine the actual frequency of BSCNs compared to articulated nouns, and it has remained unclear how many BSCNs students can expect to receive as input. The present study provides such a systematic examination. After BSCNs are introduced in Section 1, Section 2 presents the research questions and methodology that guided this project. In Section 3, we build a background profile of the bare singular form in English, using examples from the Corpus of Contemporary American English (Davies, 2008); in Section 4, we compare this representation of input to the awareness of bare forms by adult language learners; and in Section 5, we suggest L2 classroom tasks to enhance student mastery of these targeted noun forms.

Example (1) illustrates the expected use of English count nouns based on traditional prescriptive grammars, where, by definition, English count nouns cannot be used in singular form unless they occur with an article:

- 1)
 - a. He was at **the park**/***park** with the kids
 - b. She studies in **the library**/***library**
 - c. He washed **the car**/***car**
 - d. **The store** /***Store** was crowded

A small number of count nouns, however, do occur in the bare singular form. This paper suggests that the use of countable nouns without articles is particularly marked, such that the correct use of this form may be more difficult for learners to master than mass nouns or articulated count nouns. Some cross-linguistic work on noun phrase typology suggests that English singular count nouns cannot show up without an article (Munn & Schmitt, 2002). When bare singular forms in English have been discussed, this has generally been to note limits on the form. For example, Werth (1980) denies the possibility of BSCNs occurring in the subject position, and Chierchia (1998) suggests that they cannot be used in the argument position. In English grammars, the use of count nouns without an article has been mentioned, but the coverage of these forms is slight, and insufficiently motivated. For instance, Quirk, Greenbaum, Leech, and Svartik (1985, p. 277) devote a page to count nouns, simply noting that they can occur in prepositional phrases, typically with reference to a social institution, and listing a handful of forms whose use they claim is “idiomatic.” Biber, Johansson, Leech, Conrad, and Finegan (1999) devote three pages to the zero article with “nouns which in other contexts behave as ordinary countable nouns” (p. 261), including nouns from such diverse semantic classes as institutions, meals, and times of day, and constructions including predicate nominals, parallel structures, and vocatives. Stvan (1998) dedicates a monograph to the particular count nouns that occur bare, sketching a pragmatic mechanism for the contrastive readings they can convey. All of these works conclude that limited types of count nouns occur with a zero article. What is yet to be determined, however, is how (in)frequently BSCNs occur, and whether their frequency affects their acquisition and their felicitous use by non-native speakers.

For a key subset of nouns, the use of a bare singular form signals additional information, as seen in the contrasting bare and articulated forms in (2):

- 2)

Definite	Lou is in the prison = simply located in a known prison building
Indefinite	Lou is in a prison = simply located in an unknown prison building
Bare	Lou is in prison = being held as a prisoner

In this article we focus on the common nouns whose use in the bare form conveys added meaning. This means we will not examine the use of articles in proper names (cf. Moore, 2004) or the use of articles with

mass nouns (Section 2.1 shows how this plays out with part of speech tags, however). We also leave aside the more transparent bare singular noun uses in time adverbials (*at recess, at noon, on break, during dinner*) and manner adverbials for viewing and recording media (*off camera, on stage, in ink, on film*). Instead, this paper examines instances where the use of institutional BSCN forms can create additional pragmatic implicatures that contrast with the meaning created by articulated forms, an area that we suggest is in need of better mastery for English as a Second Language (ESL) learners.

To show that more than just a handful of BSCNs exist, Table 1 lists examples from American English that make up one of the larger semantic subsets—social and geographical places—accounted for by Stvan (2007). These bare-form word types represent the complete attested set of location count nouns collected from naturally occurring English from the 19th to 21st centuries. Collection of these tokens began before the authors had access to digital texts tagged with parts of speech, so this range of noun types was obtained through a combination of approaches: through opportunistic encounters within printed texts, leading to more methodical pattern-matching searches through a small corpus of *Wall Street Journal* files in digital form, followed by searches on internet search engines.

Table 1
Attested BSCNs in English (from Stvan, 2007, p. 173)

base	district	mosque	slope
bed	dock	office	stage
camp	hall	pasture	state
campus	harbor	planet	stream
cellar	hill	port	studio
chapel	home	post	synagogue
church	hospital	prison	table
class	island	property	temple
clinic	jail	river	theater
college	kindergarten	school	town
country	kitchen	sea	university
court	line	seminary	work
daycare	market	shore	world
deck	meeting	site	yeshiva

While the anomalous behavior of a few BSCNs has been documented in earlier grammars (particularly the occurrence of bare *home, school, and jail*, as in Biber et al., 1999; Collins, 2007; Fillmore, 1992), a sufficient description of the awareness and use of this set of forms by native speakers of American English has yet to be undertaken. Further, we suggest that teaching ESL learners to recognize and exploit the BSCN form can help them master the article system. Studies of learner corpora show that article misuse, particularly with mass and count nouns, continues to be the highest error type for Chinese learners of English (Chuang, 2005; White, 2009). Because determiners are a function-word category, they are discussed in grammar class, but grammar mastery is often a lower priority in more communicative-based classrooms (Celce-Murcia, 1991). Conversely, because bare singular noun forms are a low-frequency noun phrase category, they occur less often in natural input and are less frequently modeled for learners. Indeed, grammar descriptions suggest that this nominal form is non-existent or quite infrequent in everyday speech (e.g., Behrens, 1995; Werth, 1980). In addition, there is no complete examination of when and where the bare forms occur—that is, in which grammatical positions or collocations they are found. This paper offers a baseline to show which nouns happen where, in an effort to begin to determine what kind of frequency effects might be at play with BSCNs.

High frequency items have been suggested to be more prone to phonological reduction and fusion as well as semantic generalization and functional shift, while low frequency items are less entrenched and more prone to analogical changes such as regularization (Bybee & Hopper, 2001). This affects the article plus noun unit in two ways. Articles themselves are high in frequency, appearing in the top ten items of any English word index. In some frameworks, this lexical category could be considered even more frequent, since the lack

of a definite or indefinite article is sometimes considered to represent a covert article. For example, Master (1997) has argued that a covert article is the highest frequency English item, though Berezhowski (2009) suggests that a zero article should not be considered and tracked as a consistent lexical item. Whether or not one believes that bare noun forms collocate with a zero article, the issue to settle is still collocational, that is, how often do singular count nouns appear without an overt article? And additionally, what other items collocate with bare noun forms? The latter question springs from a second frequency factor, string frequency. Krug (1998), for example, looked at bigrams where the second element was *have* and found the following:

[O]f [the] potentially contractible two-word have sequences [...] nine closed class items [...] account for about half [...] of the first element, but they represent 86% [...] of the hosts of actually realized contractions. Hence, *have* contractions are not evenly spread across all hosts, but the most frequent potential hosts contract disproportionately more often than less-frequent ones. (p. 293)

Similarly, if bare forms do not follow articles, can we predict their occurrence based on the frequency of some other limited set of preceding elements? If so, how can this be exploited for language teaching? In corpus work using excerpts from textbooks and news articles, Byrd (2005) and Master (1987, 1990) explored the range of English definite and indefinite noun phrase types, but these projects did not distinguish bare singulars from other bare forms. Pedagogically, the issue of ESL learners choosing the wrong article form has been well studied (e.g., Chuang, 2005; Pica, 1983, 1994; White, 2009), though again, the possibility of leaving a noun without an article is not raised. The current paper draws on these traditions to point out a type of article-less noun form that falls through the gaps of many descriptions of English article use, and to show how understanding its functions may contribute to the mastery of the English article system.

2. Research questions and methodology

2.1. Identification of bare nouns that are both singular and count

In order to find instances of pragmatically marked BSCNs and to clarify how they are used in natural data, two approaches could be fruitful. We briefly lay out the strengths and weaknesses of each.

The first method would involve looking through a corpus for all count nouns, and then comparing the singular forms that appear with and without articles. The problem in utilizing this method is finding a relevant way to identify count nouns. Since mass nouns also lack plural forms, to automate the process of finding bare singulars, one first needs a part of speech (POS) tagset that can distinguish between singular mass and singular count nouns. Most tagsets, however, do not have this capability,² and, consequently most—but not all—hits of nouns without articles would be mass (see discussion of Table 4). Without a more fine-tuned tagger, the task of collocating instances of BSCNs requires so much sorting by hand that one loses the advantage of computer-automated processing, which is normally a strength of corpus work.

In light of drawbacks to the aforementioned approach, we chose the alternative method. This involved taking the 56 nouns that were verified as appearing in a pragmatically marked BSCN form (i.e., those from Table 1), searching for these specific nouns in a corpus, and recording how many times they appear both with an article (in their “regular” count forms) and as bare forms. This was a much more manageable task; it had the downside, however, of not assisting in finding any new types of BSCNs. Nevertheless, it allowed the search for relevant tokens in the corpus data to proceed more quickly, and, for this reason, the current project began with a list of nouns (rather than particular POS tags) to search for.

We then explored the distribution of these count nouns from corpus data to determine how many occurred with and without articles, which were the most frequent, what grammatical positions they occurred in, and what other words they collocated with. Next, using the corpus data as a representation of the types of BSCNs that learners are exposed to, we surveyed adult ESL learners from two university programs to explore how sensitive they were to uses of bare singulars, as well as whether the use of such forms correlated to their L1, and, if so, what type of article system their L1 had. Finally, drawing on these findings, we propose ways to

² The pilot sources of data examined here were the Brown Corpus (Francis & Kucera, 1964) tagged with the Penn tag set and hits from COCA, which is tagged with C5 tags. Penn’s NN and COCA’s Noun.SG both capture *table* and *information* as example words for this tag, showing that count and mass nouns are both recorded. These tagged texts provide advantages over earlier analyses, which used data not tagged for position; but finding non-mass nouns cannot yet be easily automated even with the use of these tagsets.

better support learning of BSCNs through exercises whereby students explicitly contrast the functions of count nouns used with and without articles.

2.2. Research questions

To separate the issues involved, we address the following six research questions:

- RQ1:** What is the actual breakdown of bare versus articulated noun phrases? In other words, how (in)frequent is the bare singular form as a noun phrase type?
- RQ2:** Which noun subtypes of BSCNs appear without articles most frequently?
- RQ3:** What is the BSCN distribution across the three grammatical positions of subject, direct object, and object of a preposition?
- RQ4:** Which preceding lexical items collocate most frequently with BSCNs?
- RQ5:** How aware are second language learners of the occurrence and functions of BSCNs?
- RQ6:** Since bare singulars are infrequent enough that reference grammars often suggest that they do not occur in English, we explore the ramifications for ESL learners. Specifically, we ask: How can corpus data, combined with insights from grammaticality judgments by English learners, be integrated into an ESL lesson on the syntax and pragmatics of BSCNs?

2.3. Selection of the dataset

To study the distribution of bare singulars, we started with the 56 nouns from Table 1, all known to occur in bare singular form, and separated out the 15 most frequent items, based on the frequency word list of the top 5000 words in the Corpus of Contemporary American English, COCA (Davies & Gardner, 2010). We then searched for uses of these 15 nouns in the singular form and further narrowed the search to occurrences where the nouns did not follow an article. Rather than simply picking those nouns with the highest raw number of singular forms in COCA, we selected these 15 words as those with the highest ratio of singular noun forms found after a preposition to total number of singular noun form tokens (e.g., the highest frequency word by this calculation was *jail*, which occurred 7,235 times as a singular form directly after a preposition out of the 12,329 times it occurred as a singular noun). Further, to focus on common noun use, we omitted all uses involving the bare nouns as parts of multi-word proper nouns (e.g., *Camp David*, *Church Street*, *the U.S. Supreme Court*, *Court TV*, *School of Rock*, *Scotland Yard*). In other words, in this sample, we excluded definite noun phrases that were capitalized to refer to an identifiable place or person.

3. Frequency of the bare forms as input

With these methods and caveats laid out, this section presents the findings for the first four research questions, which are based on the corpus data.

3.1. What is the frequency of bare versus articulated noun phrases?

In this section we discuss the percentage of times that null forms occur. Discussing their automated error correction program, De Felice and Pulman (2008) noted:

[T]he model is successful at identifying cases of misused determiner, e.g., *a* for *the* or vice versa, doing so in over two-thirds of cases. However, by far the most frequent error type for determiners is not confusion between indefinite and definite article, but omitting an article where one is needed. At the moment, the model detects very few of these errors, no doubt influenced by *the preponderance of null cases* seen in training. (p. 175, italics ours)

Some of the first discussions of bare noun frequency in American English come from data gathered by Master (1987, 1990). Table 2 shows the results of his 1987 study based on 269 noun phrases from articles in the magazine *Scientific American* and his 1990 study based on 5004 noun phrases found in the magazine *Newsweek*. In each of these sources, nouns without articles emerge as the most frequent noun forms.

Table 2
Bare and articulated forms (from Master, 1987, 1990)

	Definite article	Indefinite article	No determiner
<i>Scientific American</i> articles	38%	8%	54%
<i>Newsweek</i> articles	35%	19%	46%

As genre might be expected to play some part in the distribution, Byrd (2005) expanded on these studies by looking at additional text types. She found a similar breakdown in her examination of nominals in history and accounting textbooks, shown in Table 3.

Table 3
Bare and Articulated forms (from Byrd, 2005, p. 17)

	Definite article	Indefinite article	No determiner
History textbook	27.7%	9.4%	54%
Accounting textbook	32%	9.5 %	48%

In both these textbooks, bare forms are the most frequent nominal forms, followed by definite and then indefinite nouns. Within bare forms, however, those that are proper nouns and mass nouns—either with abstract referents (e.g., sadness, peace, justice, information) or tangible referents (e.g., furniture, pasta, oatmeal)—are already acknowledged in textbook lessons as examples requiring neither an article nor a plural marker in English. In other words, it is important to subdivide the types of bare forms found. Byrd's more detailed treatment of noun types that collocate with covert articles is shown in Table 4.

Table 4
Noun phrase sub-type forms (from Byrd, 2005, p. 17)

	Proper	Plural	Mass	Singular
History textbook	17.9%	16.2%	11.1%	0.5%
Accounting textbook	6.4%	13.3%	15.5%	0.3%

Byrd's data shows that proper, plural, and mass nouns, make up the majority of the bare forms in English prose. The point to note here is that while some kind of bare form accounts for about half the English nominals, of these, singular count nouns are a much smaller set, occurring less than 1% of the time. One problem with such attempts at coding nouns, however, is that many nouns can be identified that have both mass and count interpretations. Our data, for example, included contrasting noun types for *daycare*, *pasture*, *room*, *shore*, and *work*, all of which were tagged simply as non-plural nouns. More crucially, as we show below, a number of count nouns show behavior that is both un-count- and un-mass-like. To illustrate this, 15 nouns that are normally considered to be count nouns yet also appear in bare singular form were examined in detail. That is, rather than looking at the presence or lack of determination for English noun phrases in general, in this paper we examine particular ostensible mass and count nouns and their distribution with articles. Unlike the works of Master (1987, 1990) and Byrd (2005) therefore, the current study takes a type-driven look at English bare noun distribution.

As background on the different noun types, Table 5 shows two kinds of noun phrases that are not unexpected in the bare form. On the left are three proper nouns; on the right are three mass nouns. These occurrences are taken from COCA, based on material from 1990 to 2009. The nouns have been sorted into four categories: *definite*, *indefinite*, *attributive*, and *bare*. The first two categories include uses with determiners (i.e., *the*, *this*, *that*, *my*, *our*, *his*, *her*, *their*, and *possessive -s* for definite, and *a*, *an*, *some*, *each*, and *no* for indefinite). The attributive category covers uses where the noun in question is a modifier in a compound (e.g., *a prison program*, *furniture warehouses*) rather than the noun itself being the lexical item affecting the definiteness and plural morphology. The bare category covers those items where the bare noun is the head of a nominal phrase and lacks both determination and plural marking.

Table 5
*Distribution of expected bare noun types: definite, indefinite, attributive, and bare
 (from first 100 hits of each in COCA)*

Proper nouns					Mass nouns				
	Def	Indef	Attrib	Bare		Def	Indef	Attrib	Bare
Liverpool	0%	0%	22%	78%	furniture	12%	0%	25%	63%
Michael Jackson	1%	0%	13%	86%	information	17%	0%	6%	77%
Mexico	0%	0%	6%	94%	research	17%	0%	26%	57%

For the proper nouns, not surprisingly, no hits occurred with indefinite articles and few occurred with definite forms. (Of the two nouns found with definite articles, one was used to refer to a type of sandwich called “the Michael Jackson”; the other was a case of ellipsis: “I think this is the last of the pure Michael Jackson [songs].”). All the nouns could occur attributively as left-hand members of clusters, as illustrated in examples (3)–(5).

- 3) dog attired in a **Liverpool shirt** is among a crowd of soccer fans
 4) Marcia I got to know during the **Michael Jackson trial**
 5) an April 2003 research seminar on Mexico and U.S.-**Mexico relations**

Mostly, however, as seen in the fourth column in Table 5, proper nouns appeared bare. The mass nouns, predictably, could be found with definite articles, but not indefinite articles, unless these were part of larger noun phrases that the mass noun did not head (e.g., “an Education Resources Information Center search”). Like the proper nouns, these were most frequently found in bare form.

On the other hand, nouns normally considered to be countable in English, which are therefore predicted to lack bare singular uses, are gathered in Table 6, where they are listed alphabetically. A crucial split, however, is shown between the nouns in the left-hand column, which show the “typical” count noun distribution (i.e., some kind of article is required when the singular noun is used as the head of a noun phrase), and the nouns in the column on the right, which show a more unusual distribution.

Table 6
Distribution of contrasting count noun uses (from first 100 hits of each in COCA)

Regular count noun distribution					BSCN distribution				
	Def	Indef	Attrib	Bare		Def	Indef	Attrib	Bare
book	86%	11%	2%	0%	bed	31%	6%	4%	59%
box	49%	29%	22%	0%	campus	14%	4%	40%	42%
classroom	53%	16%	31%	0%	church	58%	6%	22%	14%
factory	40%	32%	27%	1%	class	45%	19%	20%	16%
floor	79%	13%	4%	4%	college	9%	3%	58%	29%
garage	70%	15%	15%	0%	court	30%	18%	20%	32%
garden	60%	24%	16%	0%	deck	61%	14%	15%	10%
house	83%	13%	4%	0%	home	29%	12%	7%	52%
library	45%	4%	51%	0%	jail	9%	8%	6%	77%
park	45%	29%	26%	0%	prison	18%	8%	39%	35%
room	80%	13%	5%	2%	school	26%	11%	27%	36%
station	62%	27%	9%	2%	sea	32%	4%	48%	16%
store	58%	28%	14%	0%	shore	69%	5%	8%	18%
yard	71%	14%	15%	0%	stage	63%	6%	13%	18%
workplace	51%	8%	40%	1%	town	42%	17%	4%	37%

Our decision regarding which count nouns to track was based on the nouns in the right-hand column, selected for having the highest frequency in COCA from the 56 count nouns found earlier to have appeared in bare form (see Table 1). We focused on those with highest ratio of singular noun forms found directly after a preposition to total number of singular noun forms. For this exploration, we excluded: those that occur as singular forms, but rarely as bare nouns (e.g., *off world, in country, out of office*); those that occur as singular, but rarely in a count sense (e.g., *work*³); and those that occur as bare, but are low in overall frequency (e.g., *seminary, kindergarten, post, stage*). The goal was to generate a list of the most prototypical bare singulars, those high both in overall word frequency and also in unarticulated uses. To achieve this, we first ranked the 56 nouns according to frequency of occurrence in singular form, then sorted them according to frequency directly after a preposition (i.e., not following an article), and then took the ratio of terms occurring as bare singular forms in a prepositional phrase to the total number of times they appeared as a singular form. In looking for these forms in the corpus, we also eliminated those examples in the first 100 hits used in non-count readings. The alphabetized list of candidate nouns is shown on the right hand side of Table 6.

As a control, the words in the left side of Table 6 were selected to match semantically, i.e., they were count nouns that named locations, used in either predicative and ditransitive constructions. The referents were all, therefore, physical or geographical locations. Furthermore, we did not include nouns with animate referents.⁴

As expected, for the nouns in the first column of the table there was a higher use of definite than indefinite forms, due, at least in part, to the English pattern of introducing a referent with an indefinite form followed by multiple definite forms for each subsequent co-referential noun phrase. This fits the expected profile for English count nouns, which normally only appear bare when they are in plural form. The count nouns on the left side had most of their occurrences with different kinds of determiners or as attributive modifiers, with very few bare forms.

Some additional discussion is called for, however, regarding which bare form should be considered a marked use for count nouns. For example, all four of the bare tokens with *floor* and for *factory* and *room* were involved in paired sets, as in (6), or serial sets that included more than one bare noun, as in (7):

- 6)
 - a. the forms fill an entire room from **floor** to **ceiling**
 - b. He moved quietly from **room** to **room**
- 7)
 - a. Yeah, right in the hallways, these hallways, first **floor**, second **floor**. It didn't matter where
 - b. a scene from the industrial revolution, with milling workers, dim, square **factory**, rocky **hillside**, and grimy English **sky**

Examples (6) and (7) were included in the counts and marked in the *bare* column because speakers have the option to use articles here, though such serial sets are often found as bare count nouns (cf. work on coordinated bare forms: Ahlgren, 1946; Heycock & Zamparelli, 2003; Jackendoff, 2008; Roodenburg, 2004). However, both types of sets occur with low frequency.

³ The word *work* was included on the list of 56 nouns in part because it has a reading parallel to the other location terms:

He's at school = he is at his school
 He's at church = he is at his church
 He's at home = he is at his home
 He's at work = he is at his work(place)

These all show the added meaning of connection to the place affiliated with the located referent. However, unlike the other nouns, *work* does not also occur in other morpho-syntactic frames as a countable noun with this meaning. The bare form of *work* mainly appeared in COCA with one of these other three senses: Work1, countable = a piece of art; Work2, mass = activity or employment; Work3, countable = employer or workplace; Work4, verb = to labor.

⁴ In pilot studies by the authors, the count noun *boy* showed additional bare uses tied to the referent being human. For example, four bare uses of *boy* appeared as heads of nicknames, such as those in (i), or as an address term, in (ii):

i)

- a. he's also affectionately known as "**Germ Boy**" for his insistence upon universal smallpox vaccine
- b. Be grateful, **TV boy**. Have respect. Have you seen the beginning of a war?

In addition, two unmodified bare tokens of *boy* were also used as address terms:

ii)

- a. Consider the risk to his own dignity that Douglass is taking here, inviting Auld to call him Frederick, his former name tied so closely to his former identity—and so dangerously close to **boy**
- b. I sed it to him, "**Boy**, you supposed to been at school

In further examining BSCN distribution in Table 6, we also see that a higher number of definite than indefinite forms were found. Roughly the same number of attributive forms was identified for BSCNs as for regular count noun. But the distinguishing characteristic of this set is that the bare use is quite high—in most cases higher than use with definite articles. Therefore, in answer to Question 1, which was concerned with the frequency of bare versus articulated noun phrases, one subset of count nouns has a low occurrence in the bare form, with a mean definite + indefinite/bare ratio of 75.6 : 0.71. For another subset of nominals, however, the ratio is reversed, with a bare form that is often equal to, or even higher than, the articulated forms, though with a much higher variation in deviation. In short, this makes a case, based on distribution, for BSCNs to be considered distinct from regular count nouns in English.

3.2. Which count nouns occurred most often without articles?

To investigate this split further, we now respond to Question 2, which asks which of the BSCN types are found most often. Since many studies have shown that how much a term begins to lose its inflection, or article marking, and become irregular, in this case becoming a BSCN, varies depending on individual word frequency, it is relevant to explore how we might let the current frequency of the overall noun phrase form drive the choice of the particular nouns being investigated. And regarding token frequency, it is helpful here to compare whether any of the bare singular forms are in the top noun lemmas of English. Thus, for each of the 15 BSCNs nouns examined, Table 7 shows the words sorted by highest to lowest occurrence in bare form.

Table 7
BSCNs from Table 6 ranked by
frequency of the bare form

BSCNs	Frequency of bare uses
jail	77%
bed	59%
home	52%
campus	42%
town	37%
school	36%
prison	35%
court	32%
college	29%
shore	18%
stage	18%
class	16%
sea	16%
church	14%
deck	10%

From the ranking in Table 7, it becomes apparent that BSCNs can be viewed as falling into two groups: those with the most frequent bare forms (30% of the time or more) and those with bare form counts of 10-18%. An unpaired t-test shows the p value (.00007) to be extremely significant at a 95% confidence interval. The semantic aspects of the lower frequency group of nouns reveal another telling characteristic as well—higher polysemy. For example, count nouns for *class* were split between meanings of “social class,” “category,” and “room or group of students.” Only the latter appeared in bare form. Likewise, for the noun *stage*, the sense meaning “level” did not occur bare, while the “location for performances” did. In addition, *shore* and *sea* appeared with both mass and count senses, also confusing the issue of whether tokens were BSCNs.

3.3. What is the overall distribution of BSCNs by position?

One quickly observable aspect of the bare uses of nouns like *jail*, *bed*, and *home* is that they do not appear with equally frequency in all grammatical positions. Many works have examined bare nouns in a single position (e.g., Baldwin et al., 2006; Stvan, 1993, 1998 on prepositional phrases; Borik & Gehrke, 2015; Stvan, 2007 on direct objects; Berezowski, 2009 on nominal predicates). Responding, then, to Question 3, we illustrate the distribution of each of the 15 most frequent BSCNs according to their position as subject, direct object or object of a preposition.

Earlier, opportunistic, naturally-occurring examples have been found for 10 BSCN types in subject position and 14 types in direct object position (Stvan, 1998, pp. 252-253). In the samples counted from the current COCA data, however, shown in Table 8, even some of these uses were too infrequent to surface in the bare nouns in the first 100 hits. The nouns *bed*, *court*, *deck*, and *sea*, for example, appear only in prepositional phrases.

In sorting these, *home* appears with two numbers in the table. These values represent the overt prepositional phrase positions as well as cases when *home* occurred after linking verbs. These latter uses are not predicate nominal constructions but function as locatives that are even further reduced, lacking a preposition as well as an article: *I'm home*; *he went home*. The bare singular use of *home*, then, appears to have a double dose of erosion, appearing with a lack of both preposition and article.

Table 8
The different grammatical positions in which BSCNs were found

BSCNs	As subject	As direct object	As object of preposition
bed	0	0	59
campus	0	3	39
church	0	4	10
class	0	2	14
college	0	2	27
court	0	0	32
deck	0	0	10
home	1	3	15/31
jail	0	3	74
prison	4	0	31
school	1	4	31
sea	0	0	16
shore	1	0	17
stage	0	3	15
town	0	7	30

The most frequent position by far for BSCNs was as the object of a preposition. Of the nouns occurring elsewhere in the phrase, *prison* was the most frequent noun found as the subject of a clause. The most frequent direct objects were *town*, *church*, *school*, *campus*, *stage*, *home*, and *jail*.

3.4. Which preceding items collocate most frequently with bare BSCNs?

Given the frequency by which these nouns occur in prepositional phrases, bare forms might be capturable through some other collocations, in this case by checking for the most common element to the left: prepositions. Following the contribution of Krug's string frequency (1998), we might expect some predictability if not of [article + noun], then of [preposition+ noun] in attempting to find singular count noun forms. This leads to the fourth research question, in which we look at prepositional phrase bigrams. Table 9 shows which prepositions appear most frequently for each noun found in a prepositional phrase, with *in* being the most common first element.

Table 9
Ranking of how frequently BSCNs are found in prepositional phrases (PPs) and list of most common prepositions

BSCNs	Freq. in PPs	Preposition preceding BSCN									
jail	74	in (39)	to (26)	from (4)	out of (3)						
bed	59	to (25)	in (17)	out of (13)	into (3)	for (1)					
home	46	Ø (32)	at (10)	to (2)	from (2)						
campus	39	on (27)	off (6)	to (3)	across (1)	around (1)	from (1)				
court	32	in (14)	to (8)	into (4)	out of (4)	through (1)	to (1)				
prison	31	in (18)	to (8)	from (2)	such as (1)	with (1)	of (1)				
school	31	to (13)	in (10)	of (2)	since (2)	before (1)	from (1)	through (1)	until (1)		
town	30	in (8)	X* of (8)	out of (5)	to (3)	into (3)	across (2)	through (1)			
college	27	in (9)	to (7)	after (2)	during (2)	at (2)	from (1)	of (1)	on (1)	out of (1)	since (1)
shore	17	from (6)	to (4)	on (3)	near (2)	toward (2)	into (1)				
sea	16	at (8)	to (4)	by (2)	from (1)	on (1)					
stage	15	on (13)	up (1)	to (1)							
class	14	in (7)	to (7)								
deck	10	on (8)	of (1)	below (1)							
church	10	in (4)	to (2)	of (2)	for (1)	between (1)					

Several trends can be seen in Table 9. All the BSCNs in prepositional phrases appear with more than one preposition, but they also have an unequal distribution. Although a sample of more than 100 noun tokens per type would undoubtedly show additional prepositions, from this data we can see that each noun has one or two prepositions with which it is much more likely to collocate. The most flexible distributions were found for *college*, with ten different prepositions in the same sample; *school*, with eight; and *town*, with seven. The most limited distribution was for *class*, which appeared only with *in* and *to*.

4. Awareness among L2 learners of English

The word type samples from the corpus data give a sense of how often learners are exposed to count and non-count nouns collocating with articles. Our next step was to query actual learners to gauge their responses to English sentences containing regular count nouns and bare singular count nouns. To obtain this information, as expressed in Question 5, adult language learners in pre-sessional English language programs on two university campuses took part in a survey that asked for their judgments on English noun use.⁵

4.1. Description of the data from Site 1

Grammaticality judgments were collected from 62 adult ESL learners at a U.K. university. Subjects were international students attending pre-sessional courses designed for those with conditional admission to the university who wished to improve their knowledge of spoken and written English in preparation for academic study at the university.⁶ Those entering the program scored 4.0-5.5 on the International English Language Testing System (IELTS). (Passing the pre-sessional course would allow them entry to an undergraduate program. Typical IELTS scores are 6.0 - 7.0 for direct entry to a degree program).

Using the survey found in Appendix A, information was gathered on the following independent variables: the speakers' native language (L1), sex, and age. The dependent variable was their judgment of the grammaticality of different bare noun forms in 20 sample sentences. A final portion of the survey asked participants to fill in a cloze test section with words or phrases. This was designed to elicit bare versus articulated noun phrases.

Of those who gave their age, 40 of the participants were aged 18-25, 21 were 26-35, and 1 was older than 35. Age of arrival was not recorded since all participants had visas entailing that they arrived at the site specifically for English courses; they were not a population who had lived or studied in the UK previously.

The first languages of the students surveyed in this group were Arabic, Chinese, Indonesian, Japanese, Korean, Kurdish, Thai, and Turkish. Five students did not specify their home language.

For the cloze test section, L1 was checked against words that should be bare in both British and American English. We also examined whether participants chose to produce a noun phrase form that would not be bare in either dialect of English (e.g., *shop* and *college*).

4.2. Description of the data from Site 2

To increase the number of speakers surveyed from each home language, a second round of grammaticality judgment data was collected from 133 adult ESL learners at a U.S. university. Participants were again international students attending pre-sessional courses at an intensive English program who wished to improve their knowledge of spoken and written English in preparation for academic study at a university. Students who participated in these surveys were from levels 1-5 (out of six levels), so they had incoming proficiency scores ranging from 35 to 77 on the H-J Composition Evaluation Tool, roughly equivalent to 400-520 on the Test of English as a Foreign Language (TOEFL). This places the speakers across a similar range of proficiency as those on the U.K. campus (Vancouver English Centre, 2015).

Using the same survey found in Appendix A, information was gathered on speakers' L1, sex, and age. For this group, 101 participants were aged 18-25, 25 were 26-35, 5 were older than 35, and two did not specify an age. The first languages of the students surveyed at this site were Arabic, Bangla, Chinese, French, Japanese, Korean, Portuguese, Romanian, Russian, Spanish, Thai, Turkish, and Vietnamese. Six students did not specify their home language. The combined number of speakers for each home language is shown in Table 10.

⁵ The collection of survey data was approved as exempt under UTArlington IRB protocol 2013-0214e.

⁶ Thanks to research assistants Naomi Weiwen Lan and Sok-Hun Kim for invaluable research assistance in gathering, sorting, and questioning the categories of noun types in the corpus, and to Jessica Rohr, Darcey Browning, and Stephen Self for inputting and sorting the survey responses.

Table 10
Combined number of speakers for the two sites

Language	Site 1 (UK)	Site 2 (US)	Totals
Arabic	9	44	53
Bangla	0	1	1
Chinese	33	9	42
French	0	11	11
Indonesian	2	0	2
Japanese	2	8	10
Korean	1	18	19
Kurdish	6	0	6
Portuguese	0	5	5
Romanian	0	1	1
Russian	0	1	1
Spanish	0	11	11
Thai	3	2	5
Turkish	1	8	9
Vietnamese	0	8	8
Unknown	5	6	11
Total	62	133	195

4.3. Analysis of the survey data for different nouns

In this section, we examine the results of pairs of questions from the survey that highlight the expected contrasting judgments of particular noun forms. We use as examples (8) Statements 9-10 and 15-16, in which only the articulated form, not the bare form, is acceptable. The statements are:

- 8) 9. *Joe likes to study **at library**
 10. Jenny likes to study **at the library**
15. I saw the new exhibition **at the museum**
 16. *I saw the new exhibition **at museum**

We examined whether learners correctly identified the bare forms in (9) and (16) as ungrammatical and the articulated forms in (10) and (15) as grammatical. Table 11 shows the results for these questions for the 133 participants at the U.S. site and the 62 participants at the U.K. site.

Table 11
Number of correct responses when bare nouns should be identified as ungrammatical

Question	Correct response (UK)	Correct response (US)
9 (*at library)	32 (52%)	82 (62%)
10 (at the library)	36 (58%)	98 (74%)
15 (at the museum)	45 (73%)	107 (82%)
16 (*at museum)	44 (71%)	90 (69%)

For both groups, the greater number of correct responses was given for the articulated forms, while the students at the U.S. site had higher correct responses overall, possibly due to the range in their proficiency level. For the U.K. group, the correct choices for the word *library* were the least confidently marked—with a

near-random set of responses, while the forms for *museum* were marked in a manner closer to that of the speakers at the other site.

In contrast to the statements examined in Table 11, the sentences with bare forms that should be rated as grammatical in any English dialect⁷ were queried for the following constructions: *in prison* (1), *to school* (5), *at school* (7), *on campus* (11), *at home* (13), and *at church* (19). Grammaticality judgments for the 133 participants at the U.S. site and the 62 participants at the U.K. site are presented in Table 12.

Table 12

Number of correct responses when bare nouns should be identified as grammatical

Question	Correct response (UK)	Correct response (US)
1 (<i>in prison</i>)	46 (74%)	105 (80%)
5 (<i>to school</i>)	49 (79%)	106 (81%)
7 (<i>at school</i>)	50 (80%)	95 (72%)
11 (<i>on campus</i>)	37 (59%)	101 (77%)
13 (<i>at home</i>)	53 (85%)	112 (85%)
19 (<i>at church</i>)	40 (64%)	84 (64%)

In these tables we see evidence that learners do recognize differences in acceptability for a number of English BSCNs, though with significantly different response rates for two particular nouns (i.e., *library* and *campus*). Following this look at individual words, our next goal was to tease apart the group responses to determine whether respondents from any given L1 scored better or worse than average on the surveys, and whether this could be explained by the number and type of articles in their first language.

The L1 information from both surveys (see Table 10) was further combined in order to sort by the article type of the home languages. This organization was intended to enable us to see patterns that might correlate with the noun phrase typology of participants' home languages, depending on whether their L1 has both definite and indefinite articles, only one, or neither. These L1 types (2-article, 1-article (d), 1-article (i), 0-article) are tallied in Table 13.

Table 13

Languages grouped by number of articles they include

	2-article	1-article (d)	1-article (i)	0-article
Language	Bangla	Arabic	Turkish	Chinese
	French			Indonesian
	Kurdish			Japanese
	Portuguese			Korean
	Romanian			Russian
	Spanish			Thai
				Vietnamese
Total Speakers	35	53	9	87

The survey responses for each of these L1 types are shown in Table 14.

⁷ Future work could collect demographic data on the form of English that learners are exposed to by instructors. Because of the varieties of English that are taught in their home countries, Arabic speakers, for example, may be more accustomed to American English dialect variants, and should rate the *in hospital* and *at university* examples differently than Chinese speakers, who may be more accustomed to British English variants. In other words, this data would allow us to interpret "correct" answers for each question by L2 subtype. Depending on the English that learners were exposed to, there should be some difference with (3) and (17), in which the bare forms are only grammatical for those learning British English, but not for those learning American English.

Table 14
Correct responses sorted by student's L1 type

Question	2-article (n=35)	1-article (d) (n=53)	1-article (i) (n=9)	0-article (n=87)	Mean per question
1 (<i>in prison</i>)	30 (86%)	38 (71%)	8 (89%)	70 (80%)	81.5%
5 (<i>to school</i>)	30 (86%)	35 (66%)	6 (67%)	75 (86%)	76.25%
7 (<i>at school</i>)	29 (83%)	37 (70%)	6 (67%)	67 (77%)	74.25
9 (<i>*at library</i>)	27 (77%)	38 (71%)	6 (67%)	49 (56%)	67.75%
10 (<i>at the library</i>)	29 (83%)	44 (83%)	7 (78%)	51 (59%)	75.75%
11 (<i>on campus</i>)	30 (86%)	30 (57%)	5 (56%)	54 (62%)	65.25%
13 (<i>at home</i>)	33 (94%)	38 (71%)	6 (67%)	85 (98%)	82.5%
15 (<i>at the museum</i>)	27 (77%)	46 (87%)	7 (78%)	64 (74%)	79%
16 (<i>*at museum</i>)	26 (74%)	38 (71%)	6 (67%)	60 (69%)	70.25%
19 (<i>at church</i>)	25 (71%)	35 (66%)	6 (67%)	52 (60%)	66%
Mean across L1 type	81.7%	71.3%	70.3%	72.1%	

From the averages along the bottom row of Table 14, we can see that speakers from languages with a two-article system—which is the case for English—perform better overall in identifying correct uses of English bare nouns. However, scores on the questions still vary according to other issues, including particular lexical items. As we saw in Table 11, *at library* is a particularly difficult item to assess, and here we see that, particularly for speakers of languages with no article system, choosing *at the library* was not a much clearer choice. And as seen in Table 12, *on campus* was a difficult bare form to approve, and indeed it is the lowest scoring form in Table 14. The combination *at home* was consistent—that is, this use of a bare noun was rated highly in Table 12 by the students on both campuses, and was correctly identified as grammatical more than all other bare forms in Table 14. This result, however, is not purely based on frequency of input, for, if that were the predictor, the ranking in Table 7 would lead us to expect *campus* to rate much better than *school* or *prison*. The bare use of *at home* is a construction whose equivalent is used as a bare form across many languages, and, indeed, this particular English collocation has been analyzed by a number of linguists (Collins, 2007; Fillmore, 1992; Jackendoff, Maling, & Zaenen, 1993).

In short, looking at judgments of bare forms in prepositional phrases, students did not recognize correct uses consistently. Some lexical items were easier to select (*home* versus *library*), while in some cases the L1 type played a role (e.g., languages with two articles versus those with just an indefinite article).

5. Incorporation of findings into a data-driven lesson

To help students focus on when these bare forms occur, we now present examples of classroom exercises to be used as part of an advanced grammar and reading course. In addressing Question 6, the intent is to find ways to raise students' awareness of the contrasting uses of count nouns that may occur with and without an article. Work by Cobb (2004) showed that concordances in the classroom led to improvement in learning new words. We suggest a variation on this: using preselected concordance lines to help focus on noticing contexts for particular contrasting collocations. The exercises involve distributing pre-collected concordance lines that students can work with in small groups. Three sample exercises are presented here, each focusing on a bare form in a different distributional slot. These tasks are aimed at expanding the discussion of where BSCNs can occur and how they are interpreted when appearing in each grammatical position.

5.1. Prepositional phrase prompts

Since we saw that the preponderance of BSCNs occur in prepositional phrases, the first set of concordance lines helps students to observe and distill contrasting constructions appearing in these positions. First, using sets like those in Figures 1 and 2, students are encouraged to discuss what meaning differences they can recognize. All of these concordance lines involve the noun *prison*. In Figure 1, students should observe that the forms do not have articles and are used to provide an adverbial-like description of a

prisoner. In Figure 2, the nouns occur with articles, and students should this time pick out an actual building or location of a person who is not a prisoner.

As the second step, students receive the prompt shown in (9). The goal is for them to create new sentences that use the intended form/meaning pairing modeled in the concordance lines. In essence, they should write two sentences using *prison* in a prepositional phrase: one referring to a person's state (e.g., *in prison*) and another to the physical location of a person who is not a prisoner (e.g., *in the prison*).

(voice-over) Released from Should he end up in I regret those years that I have wasted in Nelson Mandela, freed after 27 years in (voice-over) Sheila's date went to	prison in 1982, Beckwith has spent most the last eight years in Tennessee prison- or just with a movie deal? prison. prison , made a historic visit to the White House. prison and she's now super-cautious about the men she goes out with.
--	---

Figure 1. No article in the *prison* NP.

Scores of federal police could be seen inside "groans of anguish" that can be heard across It was a few minutes after 7 in the morning, at He was always interested in going to Waiting outside	the prison and manning guard towers. the prison and contrast with the incantory song the prison in Stark, Florida. the prison. the prison for Hammock that morning, Roby got an email on his phone
---	---

Figure 2. With articles in the *prison* NP.

- 9) **Prompt:** Write two contrasting sentences containing prepositional phrases that contain the word *prison*. One should describe the state of a prisoner; the other should refer to the physical location of some person. Which one can occur without an article?

The goal with the first two sets of concordance lines is to see the contrast between similar constructions appearing in prepositional phrases. While uses with and without an article can both be grammatical, there is a difference in meaning. In essence, for one prepositional phrase they should aim to use *prison* to talk about the state of a prisoner (e.g., *John is in prison*), as opposed to talking about the physical location of a person who is not a prisoner (e.g., *John was in the prison taking a tour*). As a review and production task, students should work in groups with a prompt like the one in (8). There are another dozen institutional nouns that work this way in English (Stvan, 1998, 2007); students can discuss the same contrast with *school*, *church*, *jail*, *campus*, etc.

5.2. Subject prompts

For bare forms in subject position, another contrast between bare and articulated nouns is highlighted. Table 8 showed that *prison* was the most likely word to appear as a subject. Therefore, in these examples, students would first read the lines in Figure 3 and 4 and compare notes on the meaning difference between them. In using the bare form here, writers produce statements used to speak generically or characteristically about life as a prisoner (e.g., *Prison was dull*); in using the articulated form, the aim is to talk about a tangible building (e.g., *The prison was made of bricks*). After some class discussion to make sure everyone understands this contrast, students would next work with the prompt in (10).

I know, I know, It can't be simply that Sexual behavior happens everywhere. I spent over six weeks in prison, and I knew what No past, no future. Maybe	prison is not an alluring alternative. prison is such a bad place - after all. Prison is one of those locations. prison was like. prison was like dope in that way.
---	--

Figure 3. No article in the *prison* NP.

	The prison was overcrowded. The prison was so full that there was barely room to move. The prison was located within Fort Jesus, The prison was only eleven miles west of Starke on State Road 16. The prison has no pharmacy,
--	---

Figure 4. With articles in the *prison* NP.

- 10) **Prompt:** Write two contrasting sentences with *prison* in the subject position. One should describe the state of life for prisoners, the other refers to the physical building. Which one can occur without an article?

Again, there are additional nouns that work this way in English. As a review, students should be able to discuss the same bare singular versus articulated contrast for other nouns. Additional follow-up tasks like those in (11) can help them develop additional meta-linguistic awareness:

- 11) a. Follow-up Task 1:
Compare notes to see if the others in your group can tell which noun phrase meanings must have no article. Work together to paraphrase each meaning.
- b. Follow-up Task 2:
There are another dozen location nouns that work this way in English. Look at the next sets of examples and discuss the same no article vs. article contrast with the words *school*, *church* and *jail*. Give paraphrases for each contrast.

5.3. Modifier prompts

In this last set, the key is to contrast the count noun as a head noun with its use as a modifier. Here the *prison* examples show how the presence or lack of an article is not always contingent upon what collocates to the immediate left of the noun; identifying the noun that serves as the head of the noun phrase can also be important. This demonstrates that, rather than simply associating “bareness” in the lexicon with particular nouns like *prison*, it is helpful for learners to note that nouns used as modifiers in compounds do not affect the choice of determiner.

In Figure 5, the word *prison* is used as a modifier. The choice of whether or not to use an article is thus determined by the head noun in the compound, the noun to the right of *prison*. The head noun may itself be singular (e.g., *prison number*, *prison sentence*) or plural (e.g., *prison administrators*, *prison officials*, *prison services*), but the form of the modifier does not inflect. After reviewing the concordance lines, students should work with prompt (12).

There has been no study. But whose IQ matches his eight-digit of 2,000-volt electricity before Legally, they could both end up with the very same Lagner is Delaware's director of	prison administrators say there's been a decrease prison number. prison officials were done. prison sentence- life in prison. prison services.
--	---

Figure 5. *Prison* as a modifier in noun-noun compounds.

- 12) **Prompt:** For each of the compound nouns, underline the noun that serves as the head of the noun phrase. Is that word singular or plural? Does the noun phrase have the right article to match the head? Why?

As a review, students should be able to find the head noun for similar modified examples with *campus*, *school*, and so on, such as the lines in Figure 6. With these examples, they should try to discuss count/number attributes and choose whether or not to use an article.

but it certainly was involved in all one of the most vocal activists in the in turn, led to an affair known as Watergate. I know of at least one make parents and students more aware of	campus activities. campus coalition against U.S. policy in the Gulf. Campus demonstrations against U.S. military. campus newspaper which has. campus safety.
--	---

Figure 6. *Campus* as a modifier in noun-noun compounds.

Overall, the use of the concordance line examples is meant to activate students' inferential ability in observing patterns of article contrast as well as their ability to produce new sentences containing appropriately bare nouns that work the same way.

6. Conclusion

We present conclusions for each of the three areas: frequency of input, learner awareness of bare forms, and pedagogical applications. Our first conclusions triangulate the corpus findings. There is distributional evidence that some apparent count nouns differ from others based on whether or not they occur lacking both determiners and plural forms: True count nouns are indeed rarely found in bare singular forms, while the group of BSCNs do appear without articles, patterning more like full noun phrases. However, some of BSCN types also have lower bare frequencies and mass uses, which further obscures the polysemy. By hunting for singular noun forms, one can find nouns that are bare and singular without being able to easily verify whether they are count nouns. In the case of BSCNs, morphology gives no clue for either humans or computers to distinguish mass from count nouns. Our first step, then, must be to verify which members of the total set of bare nouns are indeed count nouns and not names or mass noun uses. Additional accurate counts are still needed, both with a larger sample, and across different registers.

Additionally, we suggest that grammatical position should also be considered in finding and coding such noun uses. Prepositional phrases contain these forms much more often, although bare singulars can also appear as subjects or direct objects. But the nouns are not uniform in their distribution, with some occurring significantly more often as subjects, for example, than others. Of those in prepositional phrases, particular prepositions collocate with bare singulars at a high frequency. Future research in this area might entail writing a POS-tagger enhancer to identify BSCNs by including additional heuristics, such as double-checking number agreement, rather than using a tagging system based simply on probabilities. Based on the answers to our research questions, new BSCNs might be found by machine-learning the syntactic/lexical environment of known types and looking for other nouns in that same environment.

Earlier scholars have suggested that bare singular forms are not used in English at all, while others noted that they do occur, but are rare, irregular, idiomatic, residual, have not fully grammaticalized into new forms, or represent older forms that have not yet disappeared. Certainly, we can concur that their occurrence is striking. By looking more closely at those nominal constructions that appear unexpectedly bare, we have a starting point to examine whether certain token forms are differently productive, which could, for example, suggest that some are eroding while others are formed by analogy. To tackle the possibility of different directions of lexicalization, influenced by different frequencies for different noun types, one next step would be a diachronic examination of individual bare forms.

Regarding the research question exploring learner awareness of bare forms, we found that speakers from home languages with a two-article system scored better overall in identifying correct uses of English bare nouns. However, scores on the questions varied considerably according to other variables, including particular lexical items. When asked to judge bare form uses as grammatical or not in individual sentences, students had difficulty choosing between bare and articulated forms for a number of words (though a few combinations, like *at home*, were more easily identified as correct). Furthermore, the readings of many of the bare forms can be either definite or indefinite. Future research could track which BSCNs allow for pragmatic inference, and whether multiple interpretations are triggered by the form or by the position of the noun phrase, with attention to the frequency and distribution of those with a definite reading (*at home*), as opposed to the form and distribution of those with an indefinite, or more incorporation-like reading (*in school*). This leads to some of the issues that influenced the survey data. Though these are undoubtedly concerns of advanced learners, recognizing inferences created by the correct bare forms can have real-world ramifications.

Thus, lastly, we suggest applications of this information to shape upper-level ESL curriculum materials. By assisting language learners in discerning which bare forms are used and to what effect, tasks involving corpus-based material encourage learners to hypothesize about the subtypes of noun phrases in the dataset. Consequently, students are guided in developing a more fine-tuned understanding of rules for using bare forms in English and in acquiring greater awareness of the English article system. We demonstrated a method to help train English learners to be able to see patterns, which will help them to correct article discrepancies in their writing and speaking. The goal of these tasks is increased student awareness of both the semantics of bare nouns and the contexts in which they are used, providing a more structured basis for students to try out their own production of English nominals and to develop a more assured sense of when to choose bare forms.

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Appendix A

STUDY ON ENGLISH NOUNS

Your first language: _____

Your age: _____ 18-25 _____ 26-35 _____ 35 or older

Your sex: _____ F _____ M

For the 20 sentences below, please circle the number of any sentence that is ungrammatical:

1. John can't attend the party because he is **in prison**.
2. When you are **in the prison** tomorrow, look for the old clock in the entry hall.
3. I saw it yesterday when I was **in hospital**.
4. I saw it yesterday when I was **in the hospital**.
5. Starting next year, students will be able to take their mobile phones **to school**.
6. Residents are encouraged to donate their used computers **to a school**.
7. My brother learned it when he was **at school**.
8. The banker and the shop owner will drop off the money **at the school**.
9. Joe likes to study **at library**.
10. Jenny likes to study **at the library**.
11. I'll meet you **on campus**.
12. The man found a place **on the campus** to catch the bus.
13. Sorry, my little sister is not **at home**, she is still at work.
14. Sorry, my little sister is not **at the home**, she is still at work.
15. I saw the new exhibition **at the museum**.
16. I saw the new exhibition **at museum**.
17. I have been **at university** for just over a year and a half.
18. I went to a concert **at the university** that was put on by the choir.
19. Joan sat next to her cousin that day **at church**.
20. They left the car in the lot **at the church**.

Fill in the blank section:

For 21-23, please fill in any words that might be needed to make these into grammatical sentences. If the sentence is fine as it is, please fill in an X.

21. The mayor made the announcement today when he was _____ school.
22. We can buy some sandwiches _____ shop.
23. Are you going to _____ college?

Please include any optional comments you have concerning these sentences:

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