Why Is *nice and* Adj So Much More Frequent than Adj *and nice*?—From the Perspective of Humans' Social and Limited-Processing-Capacity Attributes

Jinfang PENG
Self-employed researcher and English teacher

Abstract

This paper investigates the phenomenon of imbalance between the frequencies of the *nice and* Adj and Adj *and nice* patterns from the perspective of humans' social and limited-processing-capacity attributes. Humans' social attribute requires that language users stay informative with minimal effort in communication, resulting in the from-the-least-to-the-most-informative information organization in discourse. Their limited-processing-capacity attribute requires that they resort to the production biases of "easy first" and "plan reuse" in order to achieve communicative efficiency in real-time production. The analysis of the occurrences of the *nice and* Adj pattern and native speakers' judgment of the degree of informativeness of *nice* in these occurrences suggest that *nice* is largely delexicalized. Such delexicalization makes *nice and* Adj consistent with the information organization and allows language users to stay informative with the use of the pattern, thus in line with the social attribute, but not Adj *and nice*. In the meantime, *nice* is not only highly frequent but also conceptually salient when it comes to the positive property (Panther & Thornburg, 2009), making *nice and* Adj easier to produce and more likely to be reused than Adj *and nice*, thus in line with the limited-processing-capacity attribute. The analysis of the unbalanced frequency of the two patterns suggests that human attributes should be considered when studying language form, and this should offer insights into English learning.

Keywords: **nice and *Adj*, *Adj* and nice*, social attribute, limited-processing-capacity attribute, minimal effort, informativeness, production biases***

ISSN 2192-9505 Chinese J. of Appl. Ling. 43-2 (2020), pp. 231-248 DOI 10.1515/CJAL-2020-0015

1. Introduction

In English, one may frequently hear *nice and easy* or *nice and warm*, but not so often *easy and nice* or *warm and nice*. Generally, one may encounter the *nice and* Adj pattern much more often than the Adj *and nice* pattern in English, despite the fact that they are binomials (see the next paragraph), consisting of the same coordinate adjective pattern with only the order of the adjectives reversed. The question thus arises as to why the *nice and* Adj pattern is much more frequent than the Adj *and nice* pattern.

A binomial is a sequence of two words from the same word class, put on the same level of syntactic hierarchy and usually connected by *and* (Malkiel, 1959; Mollin, 2012), that is, ___ and ___. The order or reversibility of the two words in binomials has long been the subject of discussion in linguistics (e.g., Benor & Levy, 2006; Liu, 2012; Malkiel, 1959; Mollin, 2012). Research along this line has found that 17 constraints under four categories (i.e., semantic, metrical, phonological, and others) can largely predict which word in a pair takes the first position, with semantic constraints (i.e., power, iconicity, perceptual markedness, and formal markedness), metrical constraints (i.e., number of syllables, avoidance of lapse, and avoidance of ultimate stress), and word frequency (under the other constraints category) particularly powerful (Mollin, 2012). Among these powerful constraints, however, only word frequency is relevant to the discussion here, and it predicted just 65.07% of binomials Mollin studied. As Mollin correctly points out, why a sequence becomes X *and* Y, but not Y *and* X, is still waiting to reveal "the original impetus" (2012, p. 102).

Through an analysis of the frequency and meanings of instances of the *nice and* Adj and Adj *and nice* patterns from several corpora and the Internet, Panther and Thornburg (2009) argue that the *nice and* Adj pattern is an "*emergent* construction" that "displays a 'mismatch' between form and content/function" (p. 58). Two observations are used as evidence for the construction status of *nice and* Adj in the view of Goldberg (1995, 2006). First, the *nice and* Adj pattern has a much higher frequency than the Adj *and nice* pattern. This is considered to fulfill the formal unpredictability condition. Second, the second conjunct in the *nice and* Adj pattern does not acquire the literal or inherent meaning of *nice* but appears to be pragmatically construed by the speaker as a positive attribute in the communicative context, as illustrated by the example *nice and chilly*, in which *chilly* is understood as a positive rather than negative attribute. This is taken to fulfill the semantic-pragmatic unpredictability condition. Panther and Thornburg argue that while the source meaning of the *nice and* Adj construction is positive property (denoted by *nice*) and property (denoted by the second conjunct), in the target meaning resulting from inferential processes, *nice* functions as a "conceptual modifier" (2009, p. 75) of the property denoted by the second conjunct, which carries more communicative weight than *nice* and conveys the central message.

While Panther and Thornburg (2009) account for the contrast in frequency between the *nice and* Adj pattern and the Adj *and nice* pattern from the perspective of construction or that the unbalanced frequency may be studied from the perspective of grammaticalization, this paper argues that an investigation of the phenomenon from the perspective of human attributes

can also shed light on why language users prefer certain language forms over others (in this case, *nice and* Adj over Adj *and nice*). Specifically, the paper explores how humans' social attribute and limited-processing-capacity attribute may explain the differential preference for these two patterns. The rest of this paper first outlines these two attributes and their relationships to communication by language. It then discusses in detail how these attributes may be used to account for the contrast in frequency.

2. The Perspective of Humans' Social and Limited-Processing-Capacity Attributes

This section first explores how humans' social attribute leads to their tendency to maximize the communication effect with minimal effort. It then discusses how the attribute of limited processing capacity (Just & Carpenter, 1992; McLaughlin, Rossman, & McLeod, 1983) shapes language production in ways that allow them to stay informative with minimal effort in communication.

2.1 Humans' social attribute

Communication with one another through language, as a vital part of human social life, is naturally subject to the principle of economy, a principle that governs all human activities (Becker, 1976). The core claim of the principle is that humans seek to maximize utility with the least effort (Zipf, 1949). The influence of this principle on communication through language can be seen in Zipf's (1949) law and Grice's (1975) Cooperative Principle. According to Zipf's (1949) law, the most frequent word occurs roughly twice as often as the second most frequent word, which in turn occurs twice as often as the fourth most frequent word, and so on. Zipf theorized that this pattern of word distribution resulted from language users' tendency to communicate efficiently with the least effort. This tendency was elaborated in Grice's (1975) Cooperative Principle consisting of four maxims. Most germane to the discussion here is the maxim of quantity, which states "Make your contribution as informative as is required (for the current purpose of the exchange)" and "Do not make your contribution more informative than is required," and the maxim of manner, particularly the submaxim "Be brief (avoid unnecessary prolixity)" (Grice, 1975, p. 45).

The tendency for humans to achieve the greatest communication effect with the least effort is well captured in later theories that developed from the Cooperative Principle, such as the Relevance Theory (Sperber & Wilson, 1995) and the Informativeness Requirement (Giora, 1988). The Relevance Theory defines relevance in terms of two conditions. The first condition states that "an assumption is relevant in a context to the extent that its contextual effect in this context is large." The second states that "an assumption is relevant in a context to the extent that the effort required to process it in this context is small" (Sperber & Wilson, 1995, p. 125). In other words, the theory specifies that for an assumption to be relevant in a context, it needs to be both informative and easy to process. The Informativeness Requirement accounts for how

the maxim of quantity and the maxim of relation (which states "Be relevant"; Grice, 1975, p. 45) constrain text formation. Giora conducted two experiments and found that texts generally begin with "the least informative message in a set," "proceed along an informative axis and end with the most informative message in that set" (1988, p. 547). This finding on text formation is reminiscent of the commonly agreed on information structure of a clause or sentence, in which the theme, the element that carries familiar or given information, appears before the rheme, the element that carries new information (Halliday & Matthiessen, 2004). As such, it appears reasonable to assume that information flow in communication tends to run from the least to the most informative at various levels, including phrasal, sentential, and textual. In sum, these theories show humans' tendency to be informative with minimal effort, resulting in the message organization in discourse: from the least to the most informative.

2.2 Humans' limited-processing-capacity attribute

Humans are known to be limited capacity processors (Just & Carpenter, 1992; McLaughlin et al., 1983), so the question arises as to how they stay informative with minimal effort in real-time communication. In what follows, this question is explored by looking through a psycholinguistic lens at the difficulties faced in language production.

Before producing an utterance, the language producer must develop an utterance plan (MacDonald, 2013), for instance, determining that *at the kitchen table* is a permissible word order while *table the kitchen at* is not. The developing utterance plan is kept in short-term memory before execution. Previous research has shown that elements in the utterance plan tend to interfere with one another (see, e.g., Acheson & MacDonald, 2009, for a discussion on the phonological overlap; Smith & Wheeldon, 2004, for a discussion on the semantic overlap). Given this tendency and the limited capacity of short-term memory, language is often produced incrementally. In other words, "partial planning, execution, and subsequent planning are interleaved" (MacDonald, 2013, p. 3). While interleaving planning and execution allows the producer to start early, avoid long pauses, and hold the floor, it becomes problematic when the following plan for production is not ready in a timely manner. The language producer in this situation often resorts to lengthening words (e.g., *theee* …) or adding fillers (e.g., *um* ...) to gain extra planning time. Another problem accompanying incremental production is the burden of keeping track of what has been produced so as to avoid repetitions, omissions, or ordering errors. As such, incremental production is cognitively demanding (MacDonald, 2013).

Despite the daunting challenges of incremental production, human beings are able to manage it well more often than not. To account for this phenomenon, MacDonald (2013) puts forward three memory-related production biases that help mitigate difficulties in incremental production, among which "easy first" and "plan reuse" are the most relevant to the discussion here. The easy-first bias refers to the tendency to produce first words or phrases that can be easily retrieved from long-term memory. Such words or phrases are usually short, frequent, or conceptually salient to the producer. For example, Britons say *small and medium-sized* but not *medium and small-sized*, because *small* is shorter and more frequent than *medium* (Mollin,

2012). When asked to give a list of birds, Americans may say *robin* first while *ostrich* much later, because, for them, robins are more conceptually salient as birds than ostriches (Armstrong, Gleitman, & Gleitman, 1983). By uttering easy-to-produce elements first, the language producer can have more time to plan more difficult elements that also often bear a larger amount of information. Hence, the easy-first bias facilitates ease of production while allowing the language producer to stay informative.

The plan-reuse bias pertains to the retrieval and reuse of the plan itself. A plan recently read, heard, or used is more likely to be reused to increase production fluency, a phenomenon that is often referred to as structure priming. For example, after hearing *John gave Mary a book* (a double object structure), a speaker is more likely to say *Kelly gave Sam a present* (a double object structure) rather than *Kelly gave a present to Sam* (a prepositional object structure) (Branigan, Pickering, & Cleland, 2000). In a similar vein, after recent exposure to *nice and easy*, *nice and clean* and so on, one is more likely to use *nice and warm*, *nice and cool* and so on than otherwise when he or she speaks. It is clear that this plan-reuse bias adds to the ease of production. The easy-first and plan-reuse biases together contribute to shaping utterance forms in incremental language production (MacDonald, 2013) and explain why some words tend to be produced earlier than other words and why a certain word order may be preferred over others.

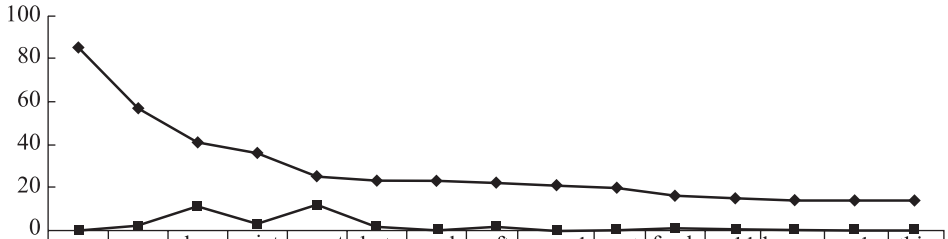
In sum, the social attribute makes language users seek to stay informative with minimal effort, resulting in the from-the-least-to-the-most-informative information organization in discourse, and the limited-processing-capacity attribute prompts humans to employ easy-first and plan-reuse biases to mitigate challenges in language production so as to stay informative with minimal effort. The next section turns to how these attributes can be used to account for the contrast in frequency between the *nice and* Adj pattern and the Adj *and nice* pattern.

3. The Case of *nice and* Adj vs. Adj *and nice*

3.1 Corpus data retrieval and analysis

Querying the Corpus of Contemporary American English (COCA) (Davies, 2008-2012) with *nice and* [j*] ([j*] denotes any adjective) as the search expression in November 2013, this researcher found 1,026 instances of the *nice and* Adj pattern, and with [j*] *and nice* 189 instances of the Adj *and nice* pattern. In the *nice and* Adj pattern, 283 unique adjectives appeared as the second conjunct. Following Panther and Thornburg (2009), this researcher used 14 as the frequency cutoff and identified 15 adjectives that appeared most frequently as the second conjunct in the pattern. For each of the 15 adjectives, the researcher queried COCA first with it appearing as the second conjunct in *nice and* Adj (e.g., *nice and easy*) and then with it appearing as the first conjunct in Adj *and nice* (e.g., *easy and nice*) and stored the concordance lines for each separately. In total, 426 concordance lines for the *nice and* Adj pattern and 33 for the Adj *and nice* pattern were retrieved using these 15 adjectives. Figure 1 displays and contrasts the frequency of the *nice and* Adj and Adj *and nice* patterns instantiated

by the 15 adjectives as the second and first conjuncts, respectively.



	easy	warm	clean	quiet	sweet	hot	cool	soft	smooth	neat	fresh	cold	brown	tender	thin
nice and adj	85	57	41	36	25	23	23	22	21	20	16	15	14	14	14
adj and nice	0	2	11	3	12	2	0	2	0	0	1	0	0	0	0

Figure 1. Frequency of conjunct ordering in the *nice and* Adj and Adj *and nice* patterns in COCA

To understand why the *nice and* Adj pattern is substantially more frequent than the Adj *and nice* pattern, this researcher analyzed the 426 concordance lines retrieved for the *nice and* Adj pattern discussed above from two aspects. First, the researcher examined the distribution of the *nice and* Adj pattern across the five genres represented in COCA (spoken, fiction, magazine, news, and academic) as well as in dialogic vs. non-dialogic contexts. It is generally recognized that the density of information is higher in the academic genre than in spoken English, and in non-dialogic contexts than in dialogic contexts. This analysis thus served to gauge whether the *nice and* Adj pattern is associated with genres and contexts with low degrees of information density. Second, given the importance of staying informative in communication, the researcher investigated the level of informativeness of *nice* in those concordance lines, focusing on the degree of delexicalization of *nice* in its contexts of use.

In the first analysis, the frequency of occurrence of the *nice and* Adj pattern in each of the five genres represented in COCA was generated automatically by COCA. In distinguishing dialogic and non-dialogic contexts, the researcher examined the specific text containing each concordance line of the *nice and* Adj pattern. If the source text of a concordance line is in the spoken genre, the context of occurrence was coded as dialogic. If the source text is in a genre other than the spoken genre, the researcher first examined whether the instance of the *nice and* Adj pattern appeared within a pair of quotation marks. If not, the context was coded as non-dialogic; if it did, the researcher then examined the text between the quotation marks to determine whether the context was dialogic or not. If only one quotation mark is shown in a concordance line, the extended context of the concordance line in COCA was examined. After all contexts of occurrence were coded as dialogic or non-dialogic, the number of each type of context in each genre was counted and the total number and proportion of each type of context were calculated.

In the second analysis, Sinclair's (1991, 2003, 2004) approach to studying the delexicalization of adjectives was adopted in analyzing the degree of delexicalization of *nice* in each instance of the *nice* and Adj pattern. According to Sinclair (1991), high-frequency words

have the tendency to partially lose their lexical meaning or to be delexicalized. He proposed the concept of progressive delexicalization:

> There is a broad general tendency for frequent words, or frequent senses of words, to have less of a clear and independent meaning than less frequent words or senses. These meanings of frequent words are difficult to identify and explain, and, with the very frequent words, we are reduced to talking about uses rather than meanings. The tendency can be seen as a progressive delexicalization, or reduction of the distinctive contribution made by that word to the meaning. (Sinclair, 1991, p. 113)

He further explained that this delexicalization phenomenon is due to the shared meaning mechanism among words:

> Successful meaning can be discerned in the text, and you can associate a meaning or a component of meaning or a shade of meaning with this or that word or phrase that is present in the text. (Sinclair, 2004, p. 19)

Take *physical assault* as an example. The meaning of *physical* is associated with the noun *assault*, as *assault* is interpreted as *physical assault* by default. While other kinds of assault exist, the physical interpretation of *assault* is canceled only when it is explicitly modified by another adjective, as in *mental assault*.

Sinclair (2003) provided a two-step method for studying the delexicalization of adjectives. First, nouns following the adjective under study (e.g., *physical*) are divided into three types (p. 36). Type A nouns are those that contain the notion expressed by the adjective (e.g., *injury* in *physical injury*); Type B nouns are those that normally include the notion expressed by the adjective (e.g., *activity* in *physical activity*); and Type C nouns are those that can normally have properties not expressed by the adjective (e.g., *structures* in *physical structures*). Second, the function of the adjective is categorized as selective and focusing (p. 37). An adjective is selective if it selects just part of the meaning of the noun it modifies, for instance, *physical* in *physical structures*. A structure can be physical or non-physical and thus the adjective selects the physical aspect of the noun. An adjective is focusing if it highlights an aspect of the meaning of the noun it modifies, for instance, *physical* in *physical assault*. As by default *assault* is interpreted as *physical assault*, *physical* in this case highlights, not selects, the physical aspect of *assault*. When an adjective performs the focusing function in a phrase, its contribution to the meaning of the phrase is reduced and it is thus considered delexicalized.

Following Sinclair (2003), this researcher first put the 15 adjectives that appeared most frequently as the second conjunct in the *nice and* Adj pattern discussed above into three groups and then examined each of the 426 concordance lines to determine whether *nice* functioned as focusing or selective. As *nice* carries a default positive connotation, an adjective with a default positive connotation was considered to contain the notion "nice" (e.g., *sweet* in *sweet and nice*) and thus categorized as Group 1 (corresponding to the aforementioned Type A); an adjective

that usually has a positive connotation was regarded as normally including the notion "nice" (e.g., *cool* in *cool and nice*) and categorized as Group 2 (corresponding to the aforementioned Type B); and an adjective with a neutral or negative connotation (e.g., *cold* in *cold and nice*) was categorized as Group 3 (corresponding to the aforementioned Type C). The online version of the *Longman Dictionary of Contemporary English* (http://www.ldoceonline.com/) was used to aid the category judgment of the 15 adjectives. This dictionary was chosen because it orders the meanings of a word by frequency, starting with the most frequent meaning. As listed below, Group 1 included six words, Group 2 four words, and Group 3 five words. Note that *brown* was put in Group 2 instead of 3, because scanning through the concordance lines containing *nice and brown*, the researcher found that this pattern was generally associated with food in the corpus with brown being a desirable color.

Group 1 (words that contain the notion "nice"): *easy*, *warm*, *clean*, *sweet*, *neat*, *fresh*
Group 2 (words that normally include the notion "nice"): *quiet*, *cool*, *brown*, *tender*
Group 3 (words that can quite normally appear with words with a neutral or negative connotation): *hot*, *soft*, *smooth*, *cold*, *thin*

After categorizing the 15 adjectives, the researcher read the concordance line by line to code each occurrence of *nice* as focusing or selective. An occurrence of *nice* was considered as focusing if omitting it would result in no or a negligible change in meaning and as selective if omitting it would result in a substantial change in meaning. For example, in the concordance line "and a neighbor said that the city was being cleaned. When everything was all *nice and clean*, they would go back outside. # Almost all of the dozen" (COCA 2011, FIC, RedCedarRev), *nice* was coded as focusing because removing it from the context would not make much difference in meaning. In contrast, in the concordance line "To keep River Bend Ranch running. They came first. 'And it's *nice and clean*, isn't it?' Sam nudged her Gram for a compliment" (COCA 2004, FIC, Bk:RainDance), *nice* was coded as selective, because its omission would cause the loss of the pleasant feature of the ranch. After all occurrences of *nice* were coded as focusing or selective, the number of occurrences of *nice* with each function was counted for each of the 15 adjectives appearing as the second conjunct and then the total number and percentage of each function were calculated. The analysis of the 33 instances of Adj *and nice* was done in a similar way.

3.2 Results of corpus data analysis

The "Total sample" section of Table 1 summarizes the distribution of the 426 instances of the *nice and* Adj pattern in dialogic and non-dialogic contexts across five genres. In terms of genre, this pattern occurred most frequently in the spoken (41%) and fiction (36%) genres and least frequently in academic texts (1%). More than half of the instances that occurred in the fiction genre (83 out of 154) were in dialogic contexts, and a substantial proportion of the instances that occurred in the magazine (17 out of 54) and news (17 out of 39) genres were in dialogic

contexts, too. In total, 292 instances (69%) of the *nice and* Adj pattern occurred in dialogic contexts, and 134 (31%) occurred in non-dialogic contexts. A chi-square test indicated that the pattern appeared significantly more frequently in dialogic than in non-dialogic contexts (χ^2 = 59.206, df = 1, $p < .0001$). This pattern of distribution suggests that the *nice and* Adj pattern has a strong tendency to appear in genres and contexts with relatively low information density.

Table 1. Distribution of the *nice and* Adj pattern across five genres and in dialogic vs. non-dialogic contexts

		Spoken	Fiction	Magazine	News	Academic	Total
Total sample[a]	Dialogic	175	83	17	17	0	292 (69%)
	Non-dialogic	0	71	37	22	4	134 (31%)
	Total	175 (41%)	154 (36%)	54 (13%)	39 (9%)	4 (1%)	426 (100%)
Survey sample[b]	Dialog	10	4	1	1	0	16 (62%)
	Non-dialog	0	5	3	1	1	10 (38%)
	Total	10 (38%)	9 (35%)	4 (15%)	2 (8%)	1 (4%)	26 (100%)

Note. [a] Total sample includes all 426 concordance lines containing the *nice and* Adj pattern retrieved from COCA. [b] Survey sample is a subset of the total sample used to survey native speakers' judgment of the degree of delexicalization of *nice* in its context of use (see Section 3.3).

Table 2 summarizes the distribution of the focusing and selective function of *nice* in the *nice and* Adj pattern with each of the 15 adjectives as the second conjunct. The 15 adjectives were divided into three groups, as discussed earlier, and an example for each function of *nice* is provided for each group of adjectives. As the results show, 80% of the instances of *nice* had a focusing function, while only 20% had a selective function, suggesting that *nice* is largely delexicalized in the *nice and* Adj pattern.

3.3 Native speaker judgment of the degree of delexicalization of *nice* in the *nice and* Adj pattern

To verify the results of the degree of delexicalization of *nice* based on this researcher's analysis, the researcher solicited judgments on the degree of delexicalization of *nice* from a group of native speakers of American English using 26 of the 426 concordance lines covering 12 of the 15 adjectives. The three adjectives dropped were *warm*, *sweet*, and *neat*, all from Group 1 and all clearly with a default positive connotation, based on the *Longman Dictionary of Contemporary English*. Among the 12 adjectives included in the survey, *easy* and *clean* each had three concordance lines to reflect their high frequency and the other 10 each had two concordance lines. For each of the 12 adjectives covered, the researcher selected the first

Table 2. Distribution of the focusing and selective function of *nice* with each of the 15 adjectives as the second conjunct

Group	Adj	Focusing	Selective	Example
Group 1	*easy*	67	18	Focusing
	warm	48	9	and a neighbor said that the city was being cleaned. When everything was all ***nice and clean***, they would go back outside. # Almost all of the dozen (COCA 2011, FIC, RedCedarRev)
	clean	30	11	
	sweet	19	6	Selective
	neat	18	2	To keep River Bend Ranch running. They came first. "And it's ***nice and clean***, isn't it?" Sam nudged her Gram for a compliment (COCA 2004, FIC, Bk:RainDance)
	fresh	12	4	
Group 2	*quiet*	28	8	Focusing
	cool	21	2	100,000 people being injured and FDA wants to keep that swept under the rug, ***nice and quiet***! JIM-STEWART: You'll find few harsher critics of the (COCA 2005, SPOK,CBS_SixtyII)
	brown	14	0	
	tender	10	4	Selective what I'm going to do. Ivan says where I'm going it's ***nice and quiet***. Maybe one other guy to take care of at this time of (COCA 1996, FIC, SouthernRev)
Group 3	*hot*	20	3	Focusing
	soft	19	3	we've given you here, if you have an electric stove, get it ***nice and hot*** and have it on high heat before you put your pot of water (COCA 1996, SPOK, ABC_GMA)
	smooth	8	13	Selective
	cold	13	2	Florida, where you could see some scattered showers. Southwest is going to be ***nice and hot*** and in the nineties in the Northwest, partly cloudy, everyone (COCA 2010, SPOK, CBS_Early)
	thin	13	1	
Total		340	86	
Percentage		80%	20%	

concordance line from the two (or three for *easy* and *clean*) genres that the *nice and* Adj pattern appeared most frequently in. In the case of a tie, the genre represented more heavily in COCA was picked. The "Survey sample" section of Table 1 summarizes information about the 26 concordance lines containing the *nice and* Adj pattern used in the survey. As can be seen, the distribution of these instances across the five genres and in dialogic and non-dialogic contexts is comparable to the distribution of the instances in the total sample. The 26 concordance lines were arranged in such a way that the same *nice and* Adj pattern would be at least five concordance lines apart from each other.

The survey was administered on SurveyMonkey. As the term delexicalization may not be familiar to respondents, the term "informativeness" was used in the survey instead. Informativeness was explained at the beginning of the survey as "providing useful information." This was illustrated with the example of *scientific research* and *scientific attitude*. The reason

for choosing a premodifier-noun construction instead of the *nice and* Adj construction for illustration was twofold. First, the delexicalization of adjectives in the former construction has been well documented (e.g., Sinclair, 2003, 2004). Second, the respondents' judgments of informativeness of *nice* in the *nice and* Adj construction in the context would not be affected by this researcher. *Scientific* is informative in *scientific attitude* but not in *scientific research* because the omission of *scientific* leads to a substantial change in the meaning of *attitude* but not in *research*. Each concordance line was preceded with the following statement: "*Nice* is informative in this context. How much do you agree or disagree?" The respondents were asked to indicate their response on a 6-point Lickert scale, with one meaning strongly disagree and six meaning strongly agree. The first item on the survey is provided as an example below.

Q1. Statement: ***Nice* is informative in this context. How much do you agree or disagree**?
JOHN-GRAY: Its—yeah just—just super—super simple. ERICA-HILL: Nice and easy, which is always good in the summer. So you can get ... (COCA 2009, SPOK, CBS_Early)

1 strongly disagree	2 disagree	3 slightly disagree	4 slightly agree	5 agree	6 strongly agree
O	O	O	O	O	O

Six native speakers of American English, all graduate students at a large public university in the US, took the survey. However, one respondent skipped three items and another spent an unusually short time on the survey (in comparison to other respondents). The responses from these two respondents were therefore excluded from the analysis. Table 3 displays the rating of each of the four remaining respondents on each concordance line along with the researcher's judgment of the function (i.e., focusing or selective) of *nice* in that concordance line. The mean of Ann's ratings was 3.62, ranging from 1 to 5; Kate 3.15, ranging from 2 to 5; May 3.69, ranging from 1 to 5, and Mary 2.81, ranging from 2 to 4. It can be noted that in some cases, native speaker ratings varied substantially. For example, for the 21st item "only one hot tub. At the beginning of the week, it's ***nice and clean***. But toward the end, I wouldn't trust anybody getting into" (2006, MAG, SportingNews), Ann rated 5, Kate 3, May 4 and Mary 2. Despite such variation among native speaker ratings for some cases, the main tendency could be found. The mean rating of all 26 instances, covering 12 adjectives and having 3 adjectives with a default positive connotation dropped, was below 4 for all four respondents, indicating that they generally interpreted *nice* as only slightly informative at best.

3.4 Discussion

Results from the corpus data analysis showed a tendency for the *nice and* Adj pattern to appear in genres (spoken and fiction) and contexts (dialogic) with low information density and a tendency for *nice* to have a focusing function in the *nice and* Adj pattern. For the 33 instances of the Adj *and nice* pattern, there appeared a similar tendency of genre (43%, 27%,

Table 3. Native speaker ratings of the degree of informativeness of *nice* in the *nice and* Adj pattern

Adj.	Item #	Ann[a]	Kate	May	Mary	Function[b]
easy	1	1	2	1	2	F
	11	3	3	4	2	F
	25	2	3	4	3	F
clean	6	4	2	4	2	F
	14	3	3	3	2	F
	21	5	3	4	2	F
fresh	5	4	2	4	2	F
	20	4	3	3	3	F
quiet	2	5	2	3	3	F
	23	4	3	4	3	F
cool	10	4	3	5	3	S
	16	5	3	2	3	F
brown	9	3	3	4	2	F
	18	3	4	4	3	F
tender	13	4	5	3	2	S
	24	4	4	3	4	S
hot	4	3	4	5	2	S
	12	4	3	4	3	F
soft	7	4	4	4	3	F
	19	5	4	2	3	F
smooth	3	4	3	4	4	S
	15	4	3	5	4	S
cold	8	2	4	5	3	S
	22	4	3	5	3	F
thin	17	3	3	4	3	F
	26	3	3	3	4	S
Mean		3.62	3.15	3.69	2.81	

Note. [a] All names are pseudonymous. [b] Function denotes the researcher's judgment of the function (F = focusing, S = selective) of *nice* in the *nice and* Adj pattern in the concordance line.

24%, 6%, and 0 in the spoken, fiction, news, magazine, and academic genres, respectively) and context (73% and 27% in dialogic and non-dialogic contexts, respectively) distributions, but an opposite tendency of the function of *nice*: 82% (27 instances) had a selective function

(i.e., selecting an aspect of what is being discussed) and 18% (6 instances) a focusing function. Results from the native speaker survey showed that they interpreted *nice* in the *nice and* Adj pattern to be slightly informative at best. These results suggest that *nice* as used in the *nice and* Adj pattern is largely delexicalized. This section discusses how the delexicalization of *nice* may affect English speakers' use of the *nice and* Adj pattern and the Adj *and nice* pattern in light of humans' social attribute and limited-processing-capacity attribute.

As discussed in Section 2, in communication, language users' social attribute makes them seek to stay informative with minimal effort, resulting in the from-the-least-to-the-most-informative information organization in discourse. The information that a largely delexicalized *nice* contributes to the meaning of its context is reduced. Hence, in the Adj and Adj pattern, *nice* tends to take the first conjunct position and leaves the second conjunct position to adjectives more informative. Recall that language users' limit-processing-capacity attribute makes them resort to the easy-first and plan-reuse biases so as to achieve efficient communication. The easy-first bias predicts the preference for *nice* as the first conjunct in the *nice and* Adj pattern for at least two reasons. First, *nice* is a high-frequency adjective. It appeared 51,478 times in COCA, more frequently than all but three[1] of the 15 adjectives (*cold*, *hot*, and *easy*) appearing as the second conjunct in the *nice and* Adj pattern. Second, *nice* is conceptually salient when it comes to positive property (Panther & Thornburg, 2009). As such, *nice* is easily retrievable in incremental production when one needs to comment on the positive property of something (MacDonald, 2013). The ease of retrieval of *nice* brings about ease of production of the *nice and* Adj pattern and efficiency in communication. With the increase in the frequency of use of the pattern and its improved retention in language users' long-term memory, increased reuse of the pattern in incremental production is also expected.

On the other hand, using *nice* as the second conjunct in the Adj *and nice* pattern, in general, does not fit with language users' social attribute and limited-processing-capacity attribute. A largely delexicalized *nice* contributes less to the meaning than the first conjunct in the Adj *and nice* pattern, which makes the pattern inconsistent with the from-the-least-to-the-most-informative information organization and thus is no longer informative, whereas staying informative with minimal effort is required by language users' social attribute. In the meantime, as discussed above, *nice* is relatively easy to retrieve when it comes to positive property due to its high frequency and conceptual salience. That means that producing any of the 15 adjectives as the first conjunct generally requires considerably more effort than producing *nice* as the first conjunct. As such, the Adj *and nice* pattern often does not follow the easy-first production bias, which stems from humans' limited-processing-capacity attribute. Needless to say, low frequency of production brings on a low likelihood of plan-reuse, which also results from the limited-processing-capacity attribute. Given these, the low frequency of the Adj *and nice* pattern does not come as a surprise.

1 Apart from *cold*, *hot*, and *easy*, *brown* also appeared more frequently than *nice* in COCA, but in many cases, it served as a proper noun (i.e., Brown). According to COCA's 5000-word list, the adjective *brown* is ranked 1782th while *nice* ranks 900th.

To illustrate the line of reasoning above, let us first take a close look at a concordance line containing an instance of *nice and clean* and another instance of *clean and nice* in COCA.

(1) and a neighbor said that the city was being cleaned. When everything was all ***nice and clean***, they would go back outside. # Almost all of the dozen (COCA 2011, FIC, RedCedarRev)

(2) they're done," Thomas said. "They just want everything to look ***clean and nice*** because they want more sponsorship money." # These days, she (COCA 2004, NEWS, NYTimes)

In (1), *nice* provides a generic positive property and *clean* a specific positive property (Panther & Thornburg, 2009). According to the *Longman Dictionary of Contemporary English*, *nice* has a meaning "pleasant," and *clean* has a specific meaning "without any dirt" or "not dirty" and, based on world knowledge, implicitly contains the meaning "pleasant." Since *nice* is less informative than *clean*, adding *and clean* to *nice* follows the from-the-least-to-the-most-informative information organization and allows one to stay informative in communication by providing additional information, that is, a specific positive property, and thus fits language users' social attribute. In real-time production, when the need to describe a positive property arises, *nice* is more easily retrievable than *clean* because of its high frequency and conceptual salience, as discussed above. Hence, *nice and clean* follows the easy-first bias and is likely to bring about the plan (i.e., *nice and clean*) reuse bias, the two biases required by language users' limit-processing-capacity attribute. If the order of *nice* and *clean* is reversed in the context of (1), *nice*, with a meaning "pleasant," makes *clean and nice* inconsistent with the from-the-least-to-the-most-informative information organization and becomes redundant, as *clean*, with a meaning "without any dirt," already implicitly contains the meaning "pleasant," and, as can be expected, is not likely to appear.

In (2), however, *clean* and *nice* each contributes new information to the utterance. In particular, although *to look clean* and *to look nice* both express a positive property, they do not subsume each other in this context. While looking clean and looking nice are both pleasant, looking nice in this case may entail other things to be done, such as painting the things or putting them in good order. Since *nice* makes a distinctive contribution to the meaning of the utterance by selecting one aspect of the things being discussed (e.g., bright color or good order), *clean and nice* in this specific context is in line with language users' social attribute and limited-processing-capacity attribute. Nevertheless, it is important to note that the selective function of a word is realized only when there is no meaning sharing in a context (Sinclair, 2004), that is, no other words in the same context associating with or sharing the meaning of the word (e.g., *nice*). This means that *nice* functions as selective only in very limited contexts. Moreover, as *nice* is highly frequent and considerably delexicalized, it is not entirely impossible that language users sense it as not expressive (e.g., the native speakers in the survey interpreted *nice* as only slightly informative at best) and tend not to use it as selective. These contribute to why *nice and clean* has 41 hits in COCA whereas *clean and nice* only 11.

Let us now turn to two other concordance lines that contain an instance of *nice and hot* and an instance of *hot and nice* from COCA, respectively.

(3) we've given you here, if you have an electric stove, get it ***nice and hot*** and have it on high heat before you put your pot of water (COCA 1996, SPOK, ABC_GMA)

(4) hot guy who will probably be a shithead because a guy who is ***hot and nice*** is out of my price range? # " It's a little more complicated (COCA 2005, FIC, Ploughshares)

Like in (1), *nice* in (3) presents a generic positive property and *hot* a specific positive property. It is true that *hot* does not usually contain a positive property and sometimes generates a somewhat negative feeling in people, such as in *hot weather*. However, in terms of using an electric stove for cooking, people want to get the stove hot. *Nice* makes explicit the pleasant feeling generated by a hot stove for cooking, or it highlights the pleasant aspect of *hot* and is less informative than the latter. Hence, *nice and hot* follows the from-the-least-to-the-most-informative information organization and allows the language user to stay informative, which is required by humans' social attribute. In real-time communication, when it comes to the positive property, *nice* can be easily retrieved by the producer due to its conceptual salience and will come out first. Thus, *nice and hot* meets the easy-first bias and makes it possible for the plan (i.e., *nice and hot*) reuse bias, the two biases emanating from humans' limited-processing-capacity attribute. If the order of *nice* and *hot* in (3) is reversed, *nice* will, like the case in (1), contribute no additional meaning to the utterance and thus, not appear.

Similar to (2), *nice* in (4) is at least equally informative as *hot*. *A guy who is hot and nice* means *a guy who is hot* and *a guy who is nice*. A hot guy may not necessarily be pleasant in other aspects to be considered nice. From the words *hot guy who will probably be a shithead*, it can be inferred that *nice* is likely a desirable quality for a hot guy. In other words, *nice* in this context selects an aspect of a guy other than being hot and makes a distinctive contribution to meaning. Therefore, *nice* is informative in (4) and *hot and nice* in this context is in agreement with language users' social and limited-processing-capacity attributes.

The analysis above indicates that *nice* needs to function as selective, that is, selecting an aspect of what is being discussed, and thus makes a distinctive contribution to the meaning of its context, to serve as the second conjunct. But the fact is that most often *nice* functions as focusing, that is, highlighting an aspect of the following adjective, as indicated by relevant explanations given by some dictionaries. Swan (2005) lists *nice and* as an entry in *Practical English Usage*. In the example *It's nice and warm in front of the fire*, he equates *nice and warm* with *pleasantly warm*. Merriam Webster College Dictionary provides a similar description for *nice and* in explaining *hendiadys*: "the expression of an idea by the use of usually two independent words connected by *and* (as *nice and warm*) instead of the usual combination of an independent word and its modifier (as *nicely warm*)." Both dictionaries treat *nice and* as a modifier of the following adjective. In other words, *nice* is considered highlighting the pleasant aspect of the following adjective *warm*. This can serve as external evidence for the argument that the delexicalized *nice* taking the first conjunct position and forming the *nice and* Adj pattern meets language users' real-time communicative needs. Otherwise, English speakers will not bother to use the *nice and* Adj pattern and there will be no way for it to make an appearance in the dictionaries.

In sum, as *nice* is largely delexicalized (i.e., functioning as focusing), when it is used as the first conjunct, it makes *nice and* Adj consistent with the from-the-least-to-the-most-informative information organization and allows the language user to stay informative. In the meantime, *nice* coming first brings about ease of communication. Hence, *nice and* Adj is produced and reused often, resulting in a high frequency. But if *nice* is used as the second conjunct, in many cases it is no longer informative (e.g., reversing the order of *nice* and *clean* in (1) and of *nice* and *hot* in (3)) and does not make an appearance. Of course, there are cases in which *nice* serves as the second conjunct, but mostly that is when *nice* functions as selective (i.e., selecting an aspect of what is being discussed), which occurs only in relatively limited contexts, that is, when there is no meaning sharing in a context (Sinclair, 2004). Therefore, Adj *and nice* is infrequent.

4. Conclusion

This paper investigates the case of frequent *nice and* Adj and infrequent Adj *and nice* from the perspective of human attributes. Humans' social attribute requires language users to stay informative with minimal effort in communication, resulting in the from-the-least-to-the-most-informative information organization in discourse, and their limited-processing-capacity attribute makes them resort to the biases of easy-first and plan-reuse in order to achieve communicative efficiency in real-time production. Consequently, language forms that meet the real-time communicative needs will be produced and reused frequently, while those that do not meet these needs are likely to be produced and reused infrequently. The analysis of the concordance lines containing the *nice and* Adj pattern from COCA and four native speakers' ratings of the degree of informativeness of *nice* in a subset of those concordance lines suggested that *nice* is largely delexicalized. Such delexicalization makes the *nice and* Adj pattern, but not the Adj *and nice* pattern, consistent with the from-the-least-to-the-most-informative information organization and allows one to remain informative. In real-time production, *nice*, being more frequent and conceptually salient, can be retrieved more easily than the fifteen adjectives. Hence, *nice and* Adj follows the easy-first bias and is likely to be reused, leading to a high frequency. In contrast, Adj *and nice* does not follow the easy-first bias and is not likely to be produced, let alone to be reused, hence a low frequency.

This study bears a theoretical implication: in studying language form, we should take language users' attributes into consideration. It is widely recognized that a living language is the collective work of its speakers and has no fixed standard for all language users to follow. In the meantime, except for using a small portion of fixed utterances for routines, language users create utterances to meet their communicative needs in dynamic contexts. Despite the lack of a fixed standard for and the creative nature of language use, some language forms (e.g., *nice and* Adj) occur much more frequently than others (e.g., Adj *and nice*). In this situation, looking at the attributes shared by language users will prove illuminating in accounting for why certain language forms appear the way they are.

This study is not without insight into English learning: increasing exposure to and

communication in English would facilitate learning. Take learning the frequent *nice and* Adj pattern for example. With sufficient exposure to English, learners will come across the *nice and* Adj pattern here and there, gradually become familiar with this pattern and experience the conceptual salience of *nice* in terms of the positive property and its reduced contribution to meaning in the pattern. When an opportunity arises for the learners to convey a similar message, they are more likely to produce *nice and* Adj than Adj *and nice* due to the two production biases stemming from humans' limited-processing-capacity attribute: easy-first and plan-reuse. *Nice* is likely to come first due to its high frequency and conceptual salience they have experienced. Recent exposure to the *nice and* Adj pattern, either via hearing or reading, is likely to prime them to reuse the plan, that is, to produce *nice and* Adj. Using the pattern enables them to achieve communicative efficiency, that is, staying informative with minimal effort as required by their social attribute. The use of the pattern and frequent encounters with it in input consolidate each other, enhancing retention of the pattern in long-term memory.

Studying language form by taking account of human attributes requires a cross-disciplinary approach. This study is the first attempt in that direction. The number of concordance lines used to survey native speakers' judgment of the degree of informativeness of *nice* in the *nice and* Adj pattern was rather small. The inclusion of more concordance lines will yield richer information. Further research drawing on studies from other fields is also suggested, such as psycholinguistics, neurolinguistics and brain science, to provide a more comprehensive and in-depth account.

References

Acheson, D., & MacDonald, M. (2009). Working memory and language production: Common approaches to the serial ordering of verbal information. *Psychology Bulletin, 135*, 50-68.

Armstrong, S. L., Gleitman, L. R., & Gleitman, H. (1983). What some concepts might not be. *Cognition, 13*, 263-308.

Becker, G. (1976). *The economic approach to human behavior*. Chicago: The University of Chicago Press.

Benor, S. B., & Levy, R. (2006). The chicken or the egg? A probabilistic analysis of English binomials. *Language, 82*, 233-277.

Branigan, H. P., Pickering, M. J., & Cleland, A. A. (2000). Syntactic co-ordination in dialogue. *Cognition, 75*, B13-25.

Davies, M. (2008-2012). *The Corpus of Contemporary American English: 450 million words, 1990-present*. Available from http://corpus.byu.edu/coca/

Giora, R. (1988). On the informativeness requirement. *Journal of Pragmatics, 12*, 547-565.

Goldberg, A. E. (1995). *Constructions: A construction grammar approach to argument structure*. Chicago: The University of Chicago Press.

Goldberg, A. E. (2006). *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press.

Grice, H. P. (1975). Logic and conversation. In P. Cole & J. Morgan (Eds.), *Syntax and semantics* (pp. 41-58). New York: Academic Press.

Halliday, M. A. K., & Matthiessen, C. (2004). *An Introduction to Functional Grammar* (3rd ed.). London, UK: Edward Arnold.

Just, M., & Carpenter, P. (1992). A capacity theory of comprehension: Individual differences in working memory. *Psychological Review, 99*, 122-149.

Liu, S. (2012). Study on ordering constraints in Chinese and English binomials. Unpublished doctoral dissertation, Shanghai International Studies University, Shanghai, China.

MacDonald, M. (2013). How language production shapes language form and comprehension. *Frontiers in Psychology, 4*. doi: 10.3389/fpsyg.2013.00226

Malkiel, Y. (1959). Studies in irreversible binomials. *Lingua, 8*, 113-160.

McLaughlin, B., Rossman, T., & McLeod, B. (1983). Second language learning: An information-processing perspective. *Language Learning, 33*, 135-158.

Mollin, S. (2012). Revisiting binomial order in English: Ordering constraints and reversibility. *English Language and Linguistics, 16*, 81-103.

Panther, K., & Thornburg, L. (2009). From syntactic coordination to conceptual modification: The case of the *nice and* Adj construction. *Constructions and Frames, 1*, 56-86.

Sinclair, J. (1991). *Corpus, concordance, collocation*. Oxford: Oxford University Press.

Sinclair, J. (2003). *Reading concordances: An introduction*. London, UK: Pearson Education.

Sinclair, J. (2004). *Trust the text: Language, corpus and discourse*. London, UK: Routledge.

Smith, M., & Wheeldon, L. (2004). Horizontal information flow in spoken sentence production. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 30*, 675-686.

Sperber, D., & Wilson, D. (1995). *Relevance: Communication and cognition* (2nd ed.). Malden, MA: Blackwell Publishers.

Swan, M. (2005). *Practical English usage* (2nd ed.). Oxford, UK: Oxford University Press.

Zipf, G. (1949). *Human behavior and the principle of least effort*. Cambridge, Mass.: Addison-Wesley Press.

Acknowledgments

The author thanks anonymous reviewers for their helpful suggestions on improvement. Thanks also go to Professor Xiaofei Lu for his help with the survey and his comments on an earlier draft of this manuscript.

About the author

Jinfang PENG earned her MA in Applied Linguistics from Guangdong University of Foreign Studies. She is a self-employed researcher and English teacher. Her research efforts have focused on second language acquisition, corpus linguistics, and their application in English teaching. Email: missellenpeng@163.com