An Approach to Academic Written Grammar

This unit describes the building blocks of written grammar: word forms, phrases, and clauses. Unit 1 provides a way of talking about grammar (a metalanguage) and introduces three important ideas:

- Writing can be broken into "slots." A sentence is comprised of clauses, and each clause has slots for a subject, verb, and usually a complement or two. Only certain word forms can fill those slots.

- Grammar is more than a set of rules for what you *must* write; it is a range of choices for what you *can* write.

- Your choices create three levels of meaning at the same time—the content of your sentence, your attitude or relationship with the reader, and the organization of the text.

Michael Halliday, whose functional description of grammar underlies these principles wrote: "everything has to be described before everything else" (Halliday & Matthiessen, 2004, p. 62); therefore, you will see many cross-references to other parts of this textbook, and you may refer to this unit when you are studying a later section. In this book, a cross reference in this format (2.5) means you should refer to Unit 2, Section 5.

UNIT 1 Preview Test

These sentences are not grammatical in written academic English. Find the errors and correct them.

1. This failure was occurred for two reasons.

2. Intensity is a significant in stress production.

3. He indicated me that he had decided to always choose the second syllable.

4. I do not agree that conclusion.

5. This experiment focuses the role of pitch.

6. We would suggest to find a better connector piece.

7. This would have allowed to test spheres.

8. After reviewing customer specifications, five main design concepts generated.

9. We talked Terry Larrow.

10. $1500 cost our prototype.

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Grammar Awareness: Report

Read the excerpt from a report written by a student in a psychology course included in the Michigan Corpus of Upper-level Student Papers (MICUSP). Like all the writing in MICUSP, it received an A grade. Then complete the tasks on page 3.

1 Researchers have previously <u>studied</u> and <u>suggested</u> interventions <u>designed</u> to increase women in math and science and change the environment and attitudes. Steele (1997) <u>implemented</u> a program called "wise" schooling, Nauta et al. (1998) suggested interventions designed to increase self-efficacy in math and science, and Gavin and Reis (2003) <u>proposed</u> guidelines for teachers in the classroom.

2 Steele's (1997) "wise" schooling was implemented at the University of Michigan as changes in the learning environment that were designed to reduce the stereotype threat of African American students. Some of the changes implemented <u>included</u> optimistic teacher-student relationships, giving challenging work, stressing the "expandability of intelligence," providing role models, and building self-efficacy (Steele, 1997, p. 625). Steele (1997) <u>concluded</u> that the program was effective because these students did have higher achievement compared to similar students who <u>were</u> not in the program. This study, however, had limitations. One limitation <u>is</u> that it studied a group of African-American college students who may not accurately represent all individuals facing stereotype threats; specifically, it may be hard to <u>generalize</u> these results to all women in math and science.

3 Others have proposed guidelines and suggestions for interventions but have not empirically tested their ideas themselves. For example, in their study on predictors of high-level career choices of women, Natua et al. (1998) suggested several ideas for interventions aimed at increasing the number of women in math and science. Their ideas for interventions included increasing self-efficacy, providing role models, and reducing role conflict that the students experience, for example balancing work and family (Nauta et al.). Similarly, Gavin and Reis (2003) proposed guidelines for teachers in the classroom that are aimed at encouraging girls in math. Their guidelines <u>include</u> taking personal responsibility to encourage talented girls, creating a safe and supportive learning environment, providing single-sex learning opportunities, using language and activities that are relevant to girls, creating a challenging environment, and providing role models for girls. Both of these suggested interventions have limitations because they have not been empirically evaluated. Future studies <u>need</u> to examine the effectiveness of these intervention ideas.

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1. Write the underlined verbs from the text in the correct column in the chart depending on what follows each verb. Note that the same verb might appear in more than one column.

Direct Object	Indirect Object (prepositional phrase)	*to* (infinitive) Clause	*–ing* Clause	*that* (noun) Clause

2. Write the only verb from the chart that is used in the passive voice.

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1.1: Clause Structure

A. A **finite clause** is at minimum a subject, a verb, and any objects or complements that the verb requires. A finite clause expresses a complete idea (*finite* means "bounded or limited") and can stand alone as a complete sentence. Table 1.1 shows the basic structure of finite clauses in English. Notice that many slots are empty but optional, whereas the shaded slots cannot be filled. This table does not show every possible combination, but it can help you analyze and control academic writing.

Table 1.1 The Slot Structure of Finite Clauses					
Adverb / Prepositional Phrase	Subject	Finite Verb	Other Verbs	Complement(s)	Adverb / Prepositional Phrase
(1)	The frequency	increased.			
(2)	Researchers	have	studied	interventions.	
(3)	The marker	gave		us additional information.	
(4) However,	the differences	can	be explained		by several factors.
(5)	Their ideas for interventions	included		increasing self-efficacy	as a first step.

B. Only the **subject** and verb slots are required in all finite clauses.[1] In affirmative statements in the present simple and past simple tenses in the active voice (Sentences 1, 3, 5), there is only one verb (that is, the **main verb** is finite), but in all other finite clauses, the verb is an **auxiliary verb**, such as *be, do, have,* or *get* and is followed by another verb (Sentence 2). Modal verbs are a type of auxiliary and can also fill the **finite verb** slot (Sentence 4) (6.1).

C. Each slot has limits on the type of word, phrase, or **clause** that can fill it. The subject slot can be a noun, pronoun, *–ing* clause, or sometimes a *to* infinitive, but not a prepositional phrase (*in the study*), an adverb (*quickly*), or a **bare infinitive** clause (*do research*).

D. Complements are the elements that come after the verb and are controlled by the verb. Different types of verbs allow or require different types of complements. For example, transitive verbs require a direct **object**, while linking verbs like *include* (Sentence 5) allow *–ing* clauses as complements, although a noun phrase would also be possible (e.g., "an increase in self-efficiency"). It is not always easy to guess which complements are possible after any particular verb; if English is not your first language, a good learner's dictionary will be very helpful.

E. **Non-finite clauses** have the same basic structure as finite clauses, but they do not have a finite verb that is bound or limited, and they do not usually have a subject. This means the verb is in the **infinitive** or **–ing** form. The complement in Sentence 5 is a non-finite clause, for example, because it has an *–ing* verb and no subject. When a non-finite clause is used as a subject or object, it is usually in the *–ing* form, although a *to* infinitive is often possible. Non-finite clauses that follow prepositions must be in the *–ing* form.

(6a) INCORRECT: **Provide** role models was another suggestion.

(6b) CORRECT: **Providing** role models was another suggestion.

Exercise 1: Sentence Analysis

Circle the verbs, underline the subjects, and double underline the complements in these sentences from a research report published by Johns Hopkins University about itching called "A Little to the Left" (2009) (1–5) and about microfinance, giving small loans to individuals ("Microfinance," 2010) (6–10).

1. Sensory scientists from Johns Hopkins University have discovered in mice a molecular basis for nonallergic itch.

2. Using the itch-inducing compound chloroquine, an antimalarial drug, the team identified a family of proteins called Mrgprs.

3. A report on the research appears on December 24 in *Cell*.

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[1] The subject is required in all finite clauses *except* imperative (command) clauses. However, imperatives are unusual in academic writing, except in mathematical contexts such as *Let x denote . . .* or *Assume y is constant.*

4. There are specific nerve cells dedicated for itch, different ones for pain, and still others for pleasant touch.

5. The Mrgpr-knockout mice responded specifically to chloroquine.

6. Success or failure of microfinance depends largely on the state of a nation's economy, according to a new study.

7. Microfinance is the practice of making small loans to farmers or business owners too poor to provide collateral.

8. The microfinance movement has exploded during the past two decades.

9. Ahlin and colleagues from New York University and the University of Minnesota examined the experiences of 373 microbanks worldwide.

10. As the larger economy grew, the microbanks' profit margins grew as well.

Exercise 2: Grammatical Judgment

Which of these are correct and complete (C) finite clauses in academic writing? What is missing from or wrong in the incomplete or incorrect (I) clauses?

1. C / I   Thirty-five seconds from start to finish.

2. C / I   Over the centuries of development of the industrial agriculture described above.

3. C / I   These systems damaged natural watersheds.

4. C / I   Turning a continent of rich ecological diversity into a factory for uniform production of a few generic crops.

5. C / I   These systems damaged.

6. C / I   In the 1600s foreshadowed a trend in corn growing.

7. C / I   Chicago was planned careful.

8. C / I   The Europeans began by mapping the continent.

Exercise 3: Writing

Take a recent piece of your own writing that has not been edited or corrected. Analyze your clause and sentence structure using Table 1.1 (see page 3). Correct any errors of clause structure or word form.

1.2: Noun Phrase Structure

A. Noun phrases can be used as subjects, objects, or objects of prepositions. In academic writing, the noun phrase is often long and complex, containing the substance of the sentence. The verb may be relatively simple, but it controls the structure of the clause.

B. Like clauses, noun phrases have a structure of slots, which can be filled by different types of words. Only the main noun (called the **head noun**) is always required. Every other slot depends on the type and meaning of the head noun (see Table 1.2).

Table 1.2 The Structure of Noun Phrases						
Modifiers					*Qualifiers*	
Quantifier	Determiner	(Adverb +) Adjective(s)	Noun Modifier	Head Noun	Prepositional Phrase	(Reduced) Embedded Clause
				Florida		
			college	choice		
	a	simple dynamic		model		
	the			problem	of college choice	
a few of	the			problems		facing the panther
		initially identical		institutions		
most			Florida	panthers		

C. Notice that the noun phrases in prepositional phrases *(of college choice)* and relative clauses *(facing the panther)* follow the same sequence of slots. The noun phrase is, therefore, a very flexible element.

D. It is possible to write very long noun phrases by using all the available slots. The head nouns in Examples 7–9 are in bold.

(7) the **development** of innovative, superstrong, yet light and damage-tolerant materials

(8) the building **blocks** of larger hierarchical structures with the strength and ductility of the smaller objects

(9) the **distribution** between U.S. states of investment from countries that grant foreign tax credits

These long noun phrases are common in professional academic writing but should be used cautiously and only when the meaning is clear.

E. Identifying the head noun is especially important in the subject slot because the verb agrees with the head noun (4.8). Looking at the head noun also helps choose the correct article, *a, an, the*, if needed (articles are discussed further in Unit 5).

Exercise 4: Grammar Analysis

Circle the head noun in the underlined noun phrases from a research report by the National Institutes of Health, *How Secondhand Smoke Affects the Brain* (NIH, 2011a).

1. Tobacco is the leading cause of preventable death nationwide.

2. Up to 90% of lung cancer deaths are attributed to smoking.

3. Previous research has shown that exposure to secondhand smoke increases the likelihood that children will become teenage smokers.

4. A team led by Dr. Arthur Brody of the University of California, Los Angeles, set out to study how secondhand smoke affects the human brain.

5. The method depends on a special tracer molecule that binds specifically to nAChRs [nicotinic acetylcholine receptors].

6. The researchers found that nAChRs in the brains of both smokers and non-smokers became occupied by nicotine after 1 hour of exposure to secondhand smoke.

7. This study gives concrete evidence to support policies that ban smoking in public places.

Exercise 5: Sentence Completion

Underline the head noun and draw an arrow to its verb. Then circle the correct form of the verb in parentheses to complete each sentence.

1. Considering the relative youth of the environmental justice movement in the United States, as well as the ingrained racial tensions and discrimination practices that (exists / exist) in the U.S. as opposed to many other countries, it may come as a surprise to some that the environmental justice movement (is / are) not a social movement unique to the United States.

2. Environmental problems that citizens in the United States (faces / face) (shares / share) one major similarity with those in Southeast Asia: both movements (is / are) almost always addressing a negative change to the status quo.

3. One problem that (tends / tend) to be very different between the cases in Southeast Asia as compared to cases in the United States (is / are) this idea of land use vs. land preservation.

4. The second way that U.S. environmental justice problems often (differs / differ) from those in Southeast Asia (has / have) to do with the nature of the problems themselves.

5. Many of the victims of environmental injustices in Southeast Asia (loses / lose) their land, their homes, or their occupation when they give way to government or industry.

6. The all-important link between the causes of environmental justice issues both domestically and in developing countries (is / are) that industry and government often have shared interest in pursuing the path of least resistance.

1.3: Word Form

A. Many words exist in families of nouns, verbs, adjective, and adverbs. Many words do not have all four family members, while others have one form for two family members or two or more different words for one family member (Table 1.3).

Table 1.3 Word Families			
Noun	**Verb**	**Adjective**	**Adverb**
experience	experience	experiential experienced	experientially
consideration	consider	considerate	considerately
research researcher	research		

B. Related words can be quite different in meaning; for example, *considerate* means "kind or compassionate" and is only loosely related to the verb *consider*, meaning "to think about."

C. Other parts of speech include prepositions (*at, to, on, above, against*), **pronouns** (*I, me, my, mine*), and conjunctions (*because, when, if*). Even these words can have multiple functions: *since* can be a preposition (*since 2005*) or a conjunction (*since records began*).

D. It is important to choose the right word form because some slots in the clause or noun phrase are limited to certain parts of speech.

1. The subject of a clause cannot be a prepositional phrase, adverb, or adjective.[2]

   (10a) INCORRECT: **In the United States** are approximately 1,300 cases of malaria annually.

   (10b) CORRECT: In the United States, **there** are approximately 1,300 cases of malaria annually.

2. Adverbs can modify adjectives but not nouns.

   (11a) INCORRECT: The university is subject to **quickly** changes in the environment.

   (11b) CORRECT: The university is subject to **quick** changes in the environment.

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[2] There is a possible and rare exception. With certain linking verbs (such as *be,*) the complement can be moved to the subject position for special effect; for example, *Typical is the following description,* meaning "the following description is typical."

3. Adverbs can modify most verbs, adjectives, and clauses, but not usually linking verbs such as *be* (1.7).

(12a) INCORRECT: It is **clearly** that bioethanol is not a final solution.

(12b) CORRECT: It is **clear** that bioethanol is not a final solution.

(12c) CORRECT: Bioethanol is **clearly** not a final solution.

4. Non-finite verbs (i.e., in the *–ing* or *to* infinitive forms) can be used as subjects, but not finite or base forms (the base form is the infinitive without *to*).

(13a) INCORRECT: **Understand** this phenomenon is important for many reasons.

(13b) CORRECT: **Understanding** this phenomenon is important for many reasons.

5. A noun phrase cannot consist of an article plus an adjective.

(14a) INCORRECT: The experiment was **a successful**.

(14b) CORRECT: The experiment was **a success**.

(14c) CORRECT: The experiment was **successful**.

Exercise 6: Grammatical Judgment

Choose the best form of the word in parentheses to complete the sentences.

1. Many factors need to be in place, including (adequate / adequately) resources.

2. The authors of this study (analysis / analyze / analytic) a (national / nationally) representative sample of undergraduate students.

3. Two kinds of (guarantee / guaranteed) are possible. One is (guarantee / guaranteed) employment for everyone who is willing to work (conscientious / conscientiously).

4. There was a slight (decrease / decreased / decreasing) trend.

5. The phenomenon is a (widespread / challenge / perceive).

Exercise 7: Sentence Writing

Write sentences using these words that are often confused. Do not change the form.

1. against _____

2. interested _____

3. lack _____

4. including _____

5. aware _____

6. access _____

7. priority _____

8. concern _____

1.4 Verbs and Complements

A. Verbs can be categorized by their meaning. Different types of verbs describe different kinds of experiences: **Action verbs** describe events, **reporting verbs** report speech and ideas, and **linking verbs** show how things are related. Each type of verb allows or requires different types of subjects and complements.[3] Therefore, the choice of verb controls the structure of the clause. Table 1.4 on page 11 summarizes common clause patterns in both active and passive voice. The patterns are described in 1.5–1.7.

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[3] This classification is adapted and much simplified from Halliday (1994, Ch. 5). Specifically, material and behavioral processes have been conflated into action verbs and verbal and mental processes into reporting verbs. For a detailed description of functional grammar's "processes" (verb types), see Eggins, 2004, or Lock, 1995.

Table 1.4 Common Clause Patterns		
	Active Voice Patterns	**Passive Voice Patterns (4.6)**
Action Verbs		
• *Intransitive* (1.5)	S + V (+ adverb/prepositional phrase) *An unusual reaction occurred (in the glass).* agent	
• *Transitive* (1.5)	S + V + DO *His team designed the system.* agent goal	S + V (+ *by* phrase) *The system was designed (by his team).* goal agent
• *Ditransitive (double object)* (1.5)	S + V + DO + IO *The government sold land to settlers.* agent goal recipient S + V + IO + DO *The government sold them land.* agent recipient goal	S + V + DO (+ *by* phrase) *Settlers were sold land (by the government).* recipient goal agent S + V + IO (+ *by* phrase) *Land was sold to settlers (by the government).* goal recipient agent
Reporting Verbs (1.6, 3.3, 3.5)	S + V + DO *Table 1 shows the results.* S + V + noun clause *Table 1 shows that the results are significant.* S + V + -*ing* non-finite clause *The picture shows the researcher conducting the test.* S + V + *to* non-finite clause *Table 1 shows the results to be significant.*	S + V + *to* non-finite clause *The product is known to be dangerous.* It + V + noun clause *It is known that the product is dangerous*
Linking Verbs (1.7, 2.4, 3.5)	S + V + subject complement *The operation lasted two hours.* S + V + noun clause *It appears that the test was successful.* It + V + *to* non-finite clause *The experiment appears to be finished.* It is + adjective (+ for s/o) + *to* clause *It is important for scientists to behave ethically.* It is + adjective + noun clause *It is clear that further research is needed.*	S + V + subject complement *The process is called fossilization.*

Notes: S = subject; V = verb; DO = direct object (an object without a preposition); IO = indirect object (an object that usually requires a preposition); s/o = *someone.*

1.5 Action Verbs

A. When an action verb is used, something (the **agent**) acts upon something (the **goal**), sometimes for something else (the **recipient**). The terms *agent, goal,* and *recipient* describe the function of a word in the clause.

B. Most action verbs are **transitive** and have both an agent and a goal, although the agent is often omitted in the passive voice (see 4.6). Very few verbs are truly **intransitive**, meaning they have no goal and cannot be followed by a **direct object**. Many intransitive verbs also have a transitive form or are used with a prepositional phrase or adverb that could be considered an **indirect object**.

> (15) The experiment **started**.   *(intransitive)*
>
> (16) We **started** the experiment. *(transitive)*
>
> (17) We **listened** to the interviews. *(required prepositional phrase)*

There is a difference in meaning between Sentences 15 and 16. When the verb *start* is transitive (Sentence 16), there is a human agent that causes the experiment (the goal) to start. The experiment appears to start by itself when the verb is intransitive (Sentence 15). Using a non-human agent can be very useful if you write in a discipline that discourages the use of personal pronouns (*I* and *we*).

C. A small number of verbs are **ditransitive**, or double-object verbs (Table 1.4). This means they allow an indirect object that identifies the recipient of the action. These verbs have the basic meaning of *give*, such as *leave, bring, show, tell, lend,* or *sell*.

Exercise 8: Sentence Completion

Complete each sentence with an object, a prepositional phrase, or an adverb. More than one answer is possible. Compare your sentences with a partner. Discuss your decisions.

Example: The number of voters increased ___*from 2000-2008*___.

The number of voters increased ___*the cost of holding elections*___.

1. The company grew _____.

2. The change created _____.

3. The book was published _____.

4. The city recycles _____.

5. We collected _____.

Exercise 9: Sentence Writing

Write sentences using these verbs. Use passive or active voice, and change the verb tense as needed.

1. send _____

2. apply _____

3. change _____

4. understand _____

5. reduce _____

6. contribute _____

7. provide _____

8. end _____

9. create _____

10. describe _____

Exercise 10: Writing

Think of someone who has the job you want to have eventually (a professor, a manager, a professional, or a researcher). Describe what that person does in that position. Use a variety of intransitive, transitive, and ditransitive verbs with appropriate voice, objects, and complements. Then exchange your paragraph with a partner who is not familiar with the job you chose. Read your partner's paper and ask questions about any content you do not understand. Look at all the verbs and check the clause structure together.

1.6 Reporting Verbs

A. Reporting verbs describe what people say, think, feel, or want. Although they are commonly followed by noun clauses (3.3), other complements are possible with certain verbs. It can be difficult to predict which of the patterns in Table 1.4 are possible for individual verbs. The patterns for some common verbs are provided in Table 1.5.

Table 1.5 Complements of Common Saying/Thinking Verbs in the Active Voice				
	Noun Phrase	**Finite Noun Clause**	***-ing* Clause**	***to* Infinitive Clause**
suggest	He suggested a solution.	He suggested that we do it.	He suggested doing something.	
recommend	I recommend the book.	I recommend that you buy the book.	I recommend buying the book.	I recommend you to buy the book.[4]
claim	We claim victory.	We claim that we have succeeded.		We claim to have succeeded.
show	Table 1 shows the results.	Table 1 shows that the results are significant.	The illustration shows the researcher conducting the test.	Table 1 shows the results to be significant.

B. When you have a choice between clause structures, consider these principles:

1. Using a finite clause often produces a longer sentence than using a non-finite clause and is grammatically more complex. Non-finite clauses are often preferred in academic writing (Biber et al., 1999, p. 755).

2. Some choices permit or require the introduction of an indirect object *(I recommend **you** to buy the book)*. This can improve clarity but may be inappropriate in some academic fields.

3. Some choices can reduce redundancy by omitting unnecessary participants (*We claim to have succeeded* is more concise but expresses the same idea as *We claim that we have succeeded*).

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[4] This sentence pattern appears to be rare.

C. Some saying/thinking verbs allow or require an indirect object. Thus, the choice of verb also affects the amount and type of information that can be included in the clause. Some of the most common reporting verbs in academic writing are summarized in Table 1.6.

Table 1.6 Indirect Objects with Saying/Thinking Verbs			
No Indirect Object	**Required Indirect Object (no preposition)**	**Optional Indirect Object (without preposition)**	**Optional Indirect Object (with preposition)**
believe, think, wonder, realize, notice, discover, find, assume, suspect, doubt, recommend, note, answer, add	*tell, convince, inform, persuade, remind*	*show, teach, warn, promise, caution, ask, write* [5]	*agree (with), say (to), prove (to), admit (to), argue (with), explain (to), claim (to), suggest (to), comment (to), maintain (to), observe (to), point out (to), report (to), respond (to)*
(18) The social worker **realized** that the mother was extremely skeptical.	(19) One other [grant] tries to **persuade** students that cheating is wrong.	(20) The results **show that** this option is not a realistic alternative. (21) We need to **show** children that there can be mixed emotions.	(22) Most models **agree** that elevated temperatures will decrease soil moisture. (23) We must also **agree** with him that it is confusing and misleading.

Exercise 11: Error Correction

Correct the error in each sentence.

1. The report implied us that changes were needed.

2. We convinced to try the new restaurant.

3. The CEO denied to lie about the company's finances.

4. The authors suggested to reform the tax code.

5. The effect was estimated large.

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[5] *Write* can take an indirect object without a preposition in American English, but not in some other varieties, including British English (e.g., *I wrote [British: to] him that I was coming*).

Exercise 12: Sentence Rewriting

Rewrite these sentences in the passive voice.

1. We believe that international students bring a lot of money to the state.

   It _____.

2. Some people say that consumers are more cost-conscious these days.

   Consumers _____.

3. Many people claim that illegal immigrants take jobs from citizens.

   It _____.

4. We know that fast food is one cause of obesity in young people.

   Fast food _____.

5. Experts suspect that some pesticides cause diseases in humans.

   It _____.

1.7 Linking Verbs

A. Linking verbs do not describe any action or event. Instead, they express what something *is* or *is related to.* They are frequently used in academic and scientific writing because they allow writers to link one concept (usually a noun phrase) to a value, fact, or idea.

(24) The operation **lasted** two hours.

(25) The rate **remained** stable.

(26) The proportion of the Chinese population with tertiary education **has always been** small relative to the entire population.

B. The complement of a linking verb is called a subject complement because it complements—or adds to the meaning of—the subject. The **complement** may take many forms, depending on the meaning of the clause, but it must always be equivalent to the subject in some sense.

(27a) INCORRECT: Reactions to the new policy were variety.

(27b) CORRECT: Reactions to the new policy were varied.

It is correct to describe reactions as varied (Sentence 27b), but the reactions are not a variety of anything (Sentence 27a).

C. Some linking verbs describe a characteristic of the subject (Eggins, 2004, p. 240), such as *be, have, become, turn (into / out), keep, stay, remain, seem, grow, appear, look, sound, feel, measure, weigh, cost, ensure, vary (in),* and *differ (in).* These verbs are not usually written in the passive voice.

(28) The results seem **clear**.

(29) The size of the sample became **an important consideration**.

D. Another function of linking verbs is to link a word to its definition or to a statement about its identity (Eggins, 2004, p. 241). Some common verbs are: *be, have, mean, suggest, show, represent, define, indicate, correspond to, constitute, resemble, refer to, reflect, comprise, feature, make, illustrate, express, stand for, name, call, prove, consider, signify,* and *act as.* When functioning in this way, linking verbs may be used in the passive voice.

(30) *C* **refers to** the cost of the product.

(31) The reasons **include** the increase in demographic diversity.

(32) The process **is called** fossilization.

(33) The demand for gas **is represented by** the symbol *d.*

E. Linking verbs sometimes take noun clauses as complements. However, the common verbs *appear* and *seem* can also use *it* as an **empty subject** (Sentence 36).

(34) The data **indicate** that the condition is genetic.

(35) One explanation **is** that higher drug use prompts more frequent testing.

(36) It **appears/seems** that the new policy is effective. *[The new policy appears/seems effective.]*

Exercise 13: Sentence Completion

Replace the verb *be* or complete each sentence with an appropriate verb from the box. Change the form of the verb if necessary. More than one answer is possible.

appear	include	mean	stand for
define	last	remain	vary

1. A recession can <u>be</u> many years.

2. Unemployment can <u>be</u> high for months after a recession.

3. According to economists, a recession <u>is</u> two consecutive quarters of negative growth.

4. It <u>is not</u> that everyone suffers during a recession.

5. GDP <u>is</u> gross domestic product.

6. An increase in the exchange rate _____ that the price of domestic goods will be more expensive relative to foreign goods.

7. The economic problems facing the country <u>are</u> the high level of debt and the fall in manufacturing.

8. Experts _____ in their solutions to these problems.

Exercise 14: Writing

Choose a technical term, theory, or piece of equipment from your field of study. Write several sentences to define and describe it using different linking verbs in each sentence. Remember to avoid repeating the verb *be* too often. Then exchange sentences with a partner and check that the meaning and grammar are clear.

1.8 Three Levels of Meaning

A. Writers can often choose between different clause structures and word forms.

(37a) Some people say that consumers are spending less money.

(37b) Consumers are said to be spending less money.

(37c) Consumers appear to be spending less money.

In one way, these three sentences have the same meaning because they describe the same phenomenon. However, the sentences also have different meanings: Sentence 37a focuses on *some people*, while the other two are exclusively about consumers. Sentences 37a and 37b put responsibility for the claim on someone else, whereas the writer takes more responsibility for the claim in Sentence 37c.

B. Linguists who follow Halliday's "**functional grammar**" (Halliday, 1994) explain this phenomenon by arguing that grammar creates three layers of meaning simultaneously:

1. facts, things, and experiences (**experiential** meaning—what happened?)

2. your attitudes and evaluations (**interpersonal** meaning—what do you think about it?)

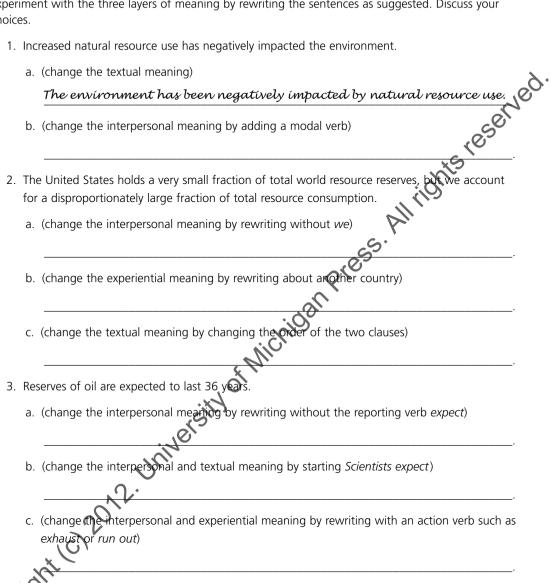3. the organization of the text (**textual meaning**—how will you present it?)

Therefore, Sentences 37a–c all had similar experiential meaning but different interpersonal and textual meanings because the message was organized differently and the sentences showed different levels of confidence in the claim about consumers.

C. Functional grammar, which underlies the approach to grammar taken in this textbook, is interested in what grammar *does* in your writing (its functions), rather than what it *is* (the "rules" of grammar). As you write, you are making choices at all three levels of meaning all the time. For example, consider these sentences.

(38a) This study gives concrete evidence to support policies that ban smoking in public places.

(38b) Concrete evidence supports policies that ban smoking in public places.

(38c) A ban on smoking in public places is supported by evidence from this study.

(38d) This study tells us that smoking should be banned in public places.

Again, the experiential meaning is similar in all four sentences, but a writer might choose each sentence for different reasons. Looking at organization first (the textual meaning), Sentences 38a and 38d are about the study, Sentence 38b focuses on the evidence, and Sentence 38c talks directly about the ban on smoking. Notice the choice of the passive voice in Sentence 38c, which allows the writer to move the evidence to the end of the sentence, where it might be developed in further sentences (8.1). In terms of interpersonal meaning, the choice of *tells* in Sentence 38d introduces an indirect object (*us*), making the sentence more conversational and less appropriate for most academic contexts. Sentence 38b seems most direct, using *supports* as an action verb without mentioning the source of the evidence.

Exercise 15: Sentence Rewriting

Experiment with the three layers of meaning by rewriting the sentences as suggested. Discuss your choices.

1. Increased natural resource use has negatively impacted the environment.

    a. (change the textual meaning)

      The environment has been negatively impacted by natural resource use.

    b. (change the interpersonal meaning by adding a modal verb)

      _____.

2. The United States holds a very small fraction of total world resource reserves, but we account for a disproportionately large fraction of total resource consumption.

    a. (change the interpersonal meaning by rewriting without *we*)

      _____.

    b. (change the experiential meaning by rewriting about another country)

      _____.

    c. (change the textual meaning by changing the order of the two clauses)

      _____.

3. Reserves of oil are expected to last 36 years.

    a. (change the interpersonal meaning by rewriting without the reporting verb *expect*)

      _____.

    b. (change the interpersonal and textual meaning by starting *Scientists expect*)

      _____.

    c. (change the interpersonal and experiential meaning by rewriting with an action verb such as *exhaust* or *run out*)

      _____.

Grammar in Your Discipline

A. Look through an article or book in your discipline and find examples of:

1. an action verb with one participant (an intransitive verb)

2. an action verb with three participants (a ditransitive verb)

3. an action verb in the passive voice

4. a passive verb with the agent in the *by* phrase (this might be hard to find)

B. Look again at your texts and answer these questions.

1. What are some frequently used *reporting* verbs? _____

    _____

2. Examine the indirect objects (if relevant) and types of complements (noun phrase, finite clause,
   to / –ing clause of the reporting verbs). Do you notice any patterns or surprises? _____

    _____

3. Which types of verbs appear to be most common: action, reporting, or linking? Can you
   explain why? _____

    _____

C. Share your findings with a small group of writers from other disciplines. Do you notice any similarities or differences? If you are using *Academic Writing for Graduate Students*, compare your findings for B1 to Table 15 on page 213.

D. Write a summary of a journal or magazine article you have read recently. Edit your summary carefully for clause structure.

For more information about summary writing, see Unit 5 of *Academic Writing for Graduate Students,* 3rd edition.