

C
ONTENTS

『I』『II』に続き**時代を映す新鮮な題材**で、生徒の知的好奇心を刺激し、入試対策にも役立ちます。

本書の構成と使い方	4
本課の学習目標一覧	7

Part 1

Lesson 1 [言語・思考／講演] 910 words	
How Language Shapes the Way We Think	8
Another Point of View	
Bilingual Benefits	16



Lesson 2 [科学技術・社会／雑誌記事] 956 words	
Weak Robots	22
Another Point of View	
Another Approach to Human-Robot Interaction	30



Lesson 3 [情報・社会／論説文] 986 words	
Fake News Is Everywhere: Beware!	36
Another Point of View	
Beware of Mainstream Media Too!	44



Reading Skill 1 Zip Lines	50
---------------------------	----

Part 2

Lesson 4 [科学技術・生き方／雑誌記事] 894 words	
Beyond What Nature Intends	52
Another Point of View	
Negative Sides of Prosthetics	60



Lesson 5 [心理・行動／ブログ記事] 1,080 words	
How to Beat Procrastination	66
Another Point of View	
Why I Taught Myself to Procrastinate	76



Reading Skill 2 Traveling to Cappadocia	82
---	----

Lesson 6 [環境・消費社会／論説文] 935 words	
Today's Treasure, Tomorrow's Trash	84
Another Point of View	
Urban Mining	92



Lesson 7 [平和・国際貢献／雑誌記事] 1,359 words	
Only a Camera Lens between Us	98
Another Point of View	
Design Your Own Life	106



Reading Skill 3 Applying to a University	112
--	-----

Part 3

Lesson 8 [芸術・文化遺産／インタビュー] 953 words	
Super Clone Cultural Properties	114
Another Point of View	
Huge Museum Featuring Reproductions of World Masterpieces	124



Lesson 9 [動物・文化／論説文] 1,004 words	
Culture in the Animal Kingdom	130
Another Point of View	
Scrub-up	138



Lesson 10 [経済・社会心理／雑誌記事] 1,139 words	
Does Money Make You Mean?	144
Another Point of View	
Can Money Buy Happiness?	152



Story 1 1,376 words	
The Silent Miaow	158
Story 2 1,178 words	
Mute in an English-only World	166

Appendix	174
Functional Expressions	184
New Words and Phrases	187
Acknowledgments	206

本書の構成と使い方

1冊の中で、段階的にレベルアップする**3パート構成**。本文の長さ・抽象度、注の有無などが変化していきます。

全体の構成

- Part 1 (Lesson 1~3)** 身近なテーマを扱います。セクションごとの区切りを設け、段階的に長い文章に取り組めるようになっています。
- Part 2 (Lesson 4~7)** より社会的な、深みのあるテーマを扱います。セクションごとの区切りを排し、より文章全体をとらえる読みを支援します。
- Part 3 (Lesson 8~10)** 抽象度の高い、より発展的なテーマを扱います。本文の傍注はつけず、より自然な形で英文を提示しています。
- Story 1, 2** 1,100~1,400語程度の物語文を読みます。

各レッスンの構成

扉

1 扉のことば
本課のテーマを象徴的に表すことばです。

3 Get Ready
本課に入る前の導入活動です。

Listen Up
本課のテーマを紹介する英文を聞いて、問題に答えます。動画アイコンがついている課では、動画で英文とともに視覚資料も提供します。

Check the Facts
本課のテーマに関連する事実やデータをクイズ形式で確認します。

Talk (アイコン)
本課のテーマに関連する質問に対して自由に答えます。

4 二次元コード
扉ページでは本課のテーマに関するリンク集とListen Upの音声・動画、本文ページでは本文と新出語の音声にアクセスできます。

本文

5 セクション番号 ※Part 1のみ
セクションの開始位置を表します。

6 傍注 ※Part 1, 2のみ
重要表現や連語・熟語などを取り上げます。

7 Q (=Question)
本文の内容理解に関する質問です。

8 ST (=Stop & Think)
本文の内容をより深く考えるための問いです。Part 1のみ、考え方のヒントになるように三択の問いになっています。

Wrap It Up! / Another Point of View

9 Wrap It Up!
A 本文の主題や概要をとらえます。
B 本文の内容について思考力を問う問題です。
C 本文の一部のリテリング、または本文全体の要約をします。
D 本文の内容について、意見交換をしたり、発表したり、書いてまとめるための問いです。

Wrap It Up! / Another Point of View

9 Wrap It Up!

- A 本文の主題や概要をとらえます。
- B 本文の内容について思考力を問う問題です。
- C 本文の一部のリテリング、または本文全体の要約をします。
- D 本文の内容について、意見交換をしたり、発表したり、書いてまとめるための問いです。

11 二次元コード

英文の音声にアクセスできます。

10 Another Point of View

本課のテーマを別の角度から扱った英文です。新出語は、巻末のNew Words and Phrasesに掲載しています。

12 Your Reaction

英文の内容について、意見交換をしたり、発表したり、書いてまとめるための問いです。

13 Addressing the Issue

本文、Another Point of Viewの内容をふまえ、本課のテーマについて考えを深めます。

Issue in Focus

扉ページと同じ問いを再掲しています。

Step 1, 2

本課のテーマに関するダイアログを聞いて、問題に答えます。

Step 3

ダイアログを聞いて、右ページのスキプトの空所を書き取ります。

Step 4

Issue in Focusについて、意見交換をしたり、発表したり、書いてまとめるための問いです。

Another Point of View

Bilingual Benefits

Learn Boroditsky says the language we speak shapes the way we think. Then, what happens when people speak two languages? Do bilinguals think differently from monolinguals?

Cognitive neuroscientists studying bilingualism have begun to change their opinion about how bilingualism affects the brain. There is a big difference in the way monolingual and bilingual children process language. If you give 5- and 6-year-olds language problems to solve, the linguistic knowledge of monolingual and bilingual children is about the same.

But on one point, there is a difference. Ask the children if an illogical sentence is grammatically correct—for example, "Oysters were meekness." The monolingual children will answer, "That's silly." But the bilingual children will say, "It's silly, but it's OK grammatically." The bilinguals have the ability to pay attention to the grammatical structure of the sentence and ignore what the sentence means.

There's an executive control system in the brain that works like a general manager. Its job is to keep you focused on what is important. If you know two languages and you use them regularly, every time you speak, both languages put up and the executive control system has to sort through everything and attend to what's important at the moment. Bilingual people use this system more frequently, which makes it more efficient. It serves as a kind of brain exercise which makes our executive control system stronger.

For a long time—up until about the 1980s—conventional wisdom held that bilingualism was a disadvantage. Bilinguals were thought to be deficient in both languages. We now know that the opposite is true. Bilinguals have a definite advantage over monolinguals. Bilingualism strengthens cognitive abilities. Bilingual people tend to be more creative and flexible. They also find it easier to focus on a variety of tasks simultaneously.

However, does bilingualism that just taking a foreign language course in high school is going to make your brain stronger. If you want to give your brain, you must consistently use the foreign language you are learning. You must get the bilingual benefit from occasional use. To repeat, you must use it regularly. You can start today—writing a story, listening to a podcast, reading news articles, or creating a video. It may be tough to keep doing your brain exercise, but it will be rewarding in the end.

1. Do you think you are bilingual? How fluent do you think a bilingual person is?

2. The article presents benefits of being bilingual. What other benefits do you think bilinguals have?

Addressing the Issue

Addressing the Issue

Script
Addressing the Issueのダイアログのスキプトです。

Step 1, 2
Listen to the dialog and write "T" if the statement is true and "F" if it is false.

1. Jack and Yumi were both impressed by the talk. ()

2. Yumi's father became interested in her after a school trip. ()

3. Jack believes that language affects the way we see the world. ()

Step 3
Listen to the dialog again and answer the following questions.

1. Yumi's father saw only "gigans" and "birds" because

a. he left his glasses at home.
b. he didn't know many bird names.
c. some languages are richer in vocabulary than others.
d. there were only pages in Zoro's book City.

2. The quote "A rose by any other name smells just as sweet" means

a. language defines things.
b. some words do not have exact translations.
c. some languages are richer in vocabulary than others.
d. what matters is what something is, not what it is called.

Step 4
Fill in the blanks in the script while listening to the dialog one last time.

Step 5
You have just listened to Professor Boroditsky's talk. You need to hand in a comment sheet. Write your opinion on the issue in Focus. Make sure to include your own example(s) to support your opinion.

15 脚注

スキプトの聞き取りの手助けとなる重要表現や連語・熟語などです。

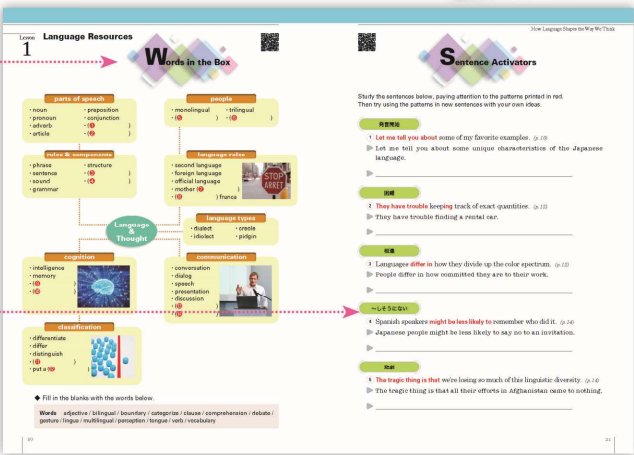
各レッスンでは、リスニング・動画による導入からまとめの活動まで、**4技能の授業の流れ**がスムーズになるよう、ページ構成やタスクを配置しています。

各レッスン末には、そのレッスンで学んだテーマや内容に関連する語彙・表現をまとめた「Language Resources」が配置されています。

Language Resources

16 Words in the Box
本課のテーマに関連する語や表現を、意味のグループに分類して整理します。言語活動の際にも適宜参照してください。

17 Sentence Activators
本課の本文から、英語で発信するために役立つ表現を取り上げ、さまざまな表現のパターンを学習します（本文ページの S マークと連動）。



課間・巻末

Reading Skill 1, 2, 3 いろいろな種類の英文を読むためのスキルを学びます。

New Words and Phrases 各課の新出語や重要表現のリストです。出現順に掲載しています。

Appendix 各課のWrap It Up! (C)、Addressing the Issue (Step 4) の解答例を掲載しています。

Functional Expressions 言語活動で役立つ表現のリストです。

記号・略号

- 発音記号は標準的なアメリカ発音を採用。
● S=主語、V=動詞、C=補語、O=目的語
● n.=名詞、v.=動詞、a.=形容詞、adv.=副詞
● e.g.=例 ● cf.=比較〔参照〕しなさい
● ()=省略可能、()=補足説明、[]=言い換え可能
● FE = Functional Expressions

アイコン



※本書では日本人の人名を〈姓名〉の順で示すことを基本としています。
本人の意志により、〈名姓〉と表記している場合もあります。
※二次元コードには、以下のURLからもアクセスできます。
<https://tbqr.sanseido-publ.co.jp/06-crown-ec3/contents/>



本課の学習目標一覧

1 年間の学習事項を提示し、学習の見通しを立てられます。

	Reading	Listening	Speaking (やり取り・発表) / Writing
Lesson 1	【講演】言語が思考にもたらす影響についての文章を読む。	言語が思考に影響をもたらすかどうかについての会話を聞き取る。	●講演で紹介された事例について話し合う。 ●Boroditsky氏へ向けて、コメントシートに感想や意見を書く。
Lesson 2	【雑誌記事】手助けを必要とする「弱い」ロボットについて読む。	ロボットについて意見を交わす二人の会話を聞き取る。	●「弱い」ロボットの例と考え方について話し合う。 ●ロボットとの未来について、短い物語を創作する。
Lesson 3	【論説文】フェイクニュースの危険性と対処法について読む。	あるニュースが誤情報かどうかについての会話を聞き取る。	●フェイクニュースの例や、SNSの功罪について話し合う。 ●フェイクニュースへの対応について、友人へアドバイスする。
Lesson 4	【雑誌記事】最先端義足の開発者Hugh Herr氏の活動について読む。	最先端義足の未来についての会話を聞き取る。	●困難を克服した有名人について話し合う。 ●手に入れたい超常能力について話し合う。 ●読んだ記事について、投書欄へ投稿する文章を書く。
Lesson 5	【ブログ記事】「先延ばし癖」の克服方法について読む。	「先延ばし癖」を話題とする会話を聞き取る。	●自分が先延ばししがちかどうかについて話し合う。 ●「先延ばし癖」への対処法をテーマとして、学校新聞の記事を書く。
Lesson 6	【論説文】家電ゴミ問題、企業戦略と消費者運動について読む。	環境にやさしい消費行動についての会話を聞き取る。	●家電の修理や廃棄について話し合う。 ●家電ゴミ問題への対応方法について、自分の考えを述べる。
Lesson 7	【雑誌記事】武装解除に携わる瀬谷ルミ子氏の活動について読む。	瀬谷氏の生き方とメッセージについての会話を聞き取る。	●自分の人生に影響を与えたものについて話し合う。 ●紛争を無くすることが可能かどうか話し合う。 ●世界平和のために何ができるか、考えを述べる。
Lesson 8	【インタビュー】スーパークローン文化財について読む。	美術品の補修と複製についての会話を聞き取る。	●どのクローン文化財を見たいか、どんな要素を付加したいかについて話し合う。 ●美術館のキュレーターとして、どのような複製展示を企画したいのか述べる。
Lesson 9	【論説文】動物の文化について論じる文章を読む。	動物の文化についての会話を聞き取る。	●文化の考え方と動物の文化の例について話し合う。 ●動物の文化の定義について、自分の考えを述べる。
Lesson 10	【雑誌記事】裕福さと思いやりの関係を示す研究について読む。	裕福さと思いやりの関係を示す研究についての会話を聞き取る。	●裕福さと思いやりの関係について話し合う。 ●経済的不平等の解消のために何ができるかについて述べる。

Weak Robots

*"We're fascinated with robots
because they are reflections of ourselves."
— Ken Goldberg*

Get Ready



本課の題材について、**リスニング**で導入します。動画アイコン付きの課では**動画資料**も提供します（QRコードから）。

Weak Robots

1 Listen Up

Watch the video clip and answer the questions.

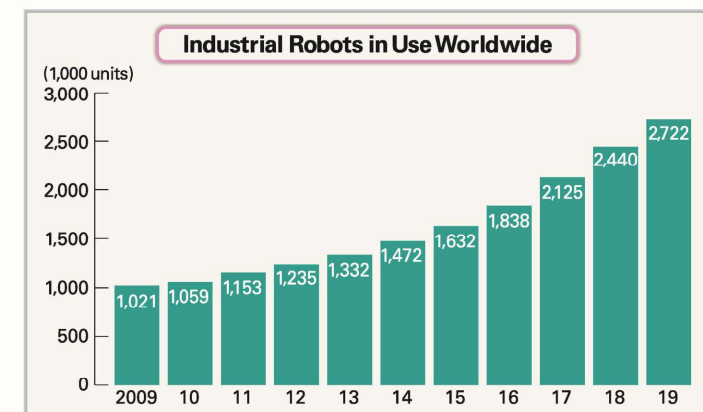
- The speaker sees
 - only a bright future.
 - only a frightening future.
 - a future that is both bright and frightening.
- Professor Okada is working on robots that
 - work with people.
 - work in place of people.
 - control people.

本課の題材に関する**事実やデータ**を、クイズ形式で確認します。

2 Check the Facts

Make a guess and see if you can get the facts right.

- The word *robot* comes from a Slavic word meaning "(master / servant)."
- The number of industrial robots in use worldwide is 2.7 (million / billion).
- (China / The US) is the world's largest user of industrial robots.
- About (2 / 20) percent of the world's vacuum cleaners are robots.
- Japan will automate (7 / 27) % of existing work tasks by 2030.
- It is estimated that more than 9 (thousand / million) communication robots will be introduced in Japan by 2030.
- In Japan, finding workers can be a challenge because almost a (fifth / third) of the population are aged 65 or above.



Part 1 Lesson 2



課全体のテーマとなる問いです。課末の活動で、この問いについて考えます。

Issue in Focus

What do you think the relationship between humans and robots will be in the future?



Some robots can communicate with humans. What do you think about this? Do you want one of these robots at home?

Lesson
2

We expect robots to work for us, performing a range of services. They are our servants. After all, the word *robot* comes from *robot*, a Slavic word meaning “slave” or “servant.” But is it possible for us to form a more cooperative relationship with robots?

1 **W**hen we think about robot technology, we often think about autonomous robots which can work independently of human beings. Space probes which wander across the surface of Mars. Delivery robots that drop packages right on our doorsteps. Our vision of the future is a vision of autonomous robots driving our cars, cleaning our houses, cooking our meals. They might be called “strong” robots, in the sense that they can work without human help.

While we wait for that future, we make do with “weak” robots like the little cleaning robot that sweeps our floors. The little guy is cute but not very smart. He’s always getting tangled up in electrical cords. In order to help him clean the room without getting into trouble, you might start by picking up things which could be in his way.

The room gets cleaned up. But when you ask: “Who cleaned this room?” you make an interesting discovery. The little robot did not clean the room by itself. You did not clean the room by yourself. The two of you did it together. The robot cleverly managed to get your cooperation in cleaning the room. What’s interesting about the little cleaning robot is that, for all his weakness, he has become part of your family.

7. independently of ~ ≡ without the help of ~
7. wander across ≡ move around
11. in the sense that ~
13. make do with ~ ≡ manage by using ~
15. get tangled up in ~ ≡ get caught up in ~
17. get into trouble ≡ come across a problem
18. in one’s way
24. for all ≡ despite

- Q-1 In what sense does the author say some robots are “strong”?
Q-2 How can you help the cleaning robot?

- St Which of the following agrees with the author’s opinion?
a. The cleaning robots frequently need repairing.
b. Robots should be able to work without human help.
c. The weakness of the cleaning robot is not necessarily a bad thing.



難易度・内容を考慮した自然な英文による本文で、
高校英語の総まとめの学習を行えます。

Many robot engineers find dependence on humans to be a defect. They want to make weak robots stronger, which is to say, more independent of people.

However, the little episode above suggests that weak robots might help create a positive relationship between robots and humans. In fact, Okada Michio, a professor at Toyohashi University of Technology, sees weakness as a virtue. He is working on robots which are designed *not* to work without human interaction.

Take a wastebasket called *Sociable Trash Box* (STB), for example. Its job is to see that trash gets picked up. This weak robot approaches the trash and circles around it helplessly, waiting for someone’s assistance. When people come along and see the robot moving its body as if asking for help, they usually pick up the trash and place it in the basket. STB bows, as if to say, “Thanks!”

27. which is to say ≡ which means
38. come along ≡ appear
39. as if asking ≡ as if it is asking
40. as if to say ≡ as if it is saying



Professor Okada Michio and his weak robots



Sociable Trash Box

- Q-3 What are “weak” robots?
Q-4 What do people usually do when they see STB circle around the trash helplessly?

本文の内容をより深く考える問い（Stop & Think）を配置。Part 1では考え方のヒントとなるよう、三択問題の形になっています。

Lesson
2

本文中のSマークは、課末のSentence Activatorsと連動しています。

45. draw out ~
≡ bring out ~

3

In the conventional way of thinking, a room cleaner that gets tangled up in a cord, or a machine that cannot pick up the trash by itself, is weak or maybe defective. But from Okada's point of view, this weakness draws out our cooperative spirit. Far from being dehumanizing, working with a robot like STB can make us more human.

51. call ~ up
≡ give ~ a call



Talking to a smartphone

62. care for ~
≡ look after ~

"OK," you may say, "but how about the human-AI interactions we already enjoy? I can talk to my smartphone. I ask her a question. She answers. We communicate." But is that really communication? How often does your smartphone call you up?

Okada wants us to think of a more intimate human-robot relationship. Real communication is not a matter of *me* talking to *you* and *you* talking to *me*, but rather a case of *us* communicating with one another. Is this sort of communication possible between humans and robots? Perhaps.

Think of babies. Babies cry for milk. They show their satisfaction by becoming quiet. Parents learn to listen to the way their baby cries and watch their baby's reactions. Although no words are exchanged, a real form of communication exists between them.

Raising an infant involves interaction. The baby is cared for and gets the milk that it wants. The parents experience joy in looking after the child. The baby's helplessness and weakness draw out the parents' love and support. Could this natural form

- Q-5 Which type of communication does "talking to a smartphone" belong to, "*me* talking to *you*" or "*us* communicating with one another"?
- Q-6 What draws out the parents' love and support?

ST Okada sees the weakness of some robots as a virtue because

- a. it empowers humans.
- b. it draws out our cooperative spirit.
- c. it makes the robot independent of people.

of communication also take place between humans and robots? Okada is looking at how such a coexistence might occur.

In order to explore this possibility, Okada and his colleague made *Mako-no-te*, a small one-armed robot



Mako-no-te

which can walk. When walking hand-in-hand, the robot gives you cues, adjusting the direction and speed by pulling your hand with its arm. You infer the robot's intentions. Apparently, just walking with the robot helps you build an interpersonal relationship with it. A kind of natural form of communication seems to be taking place between the human and the robot.

Okada's concept of weak robots is not just of theoretical interest; it may have a practical implication. One of the main concerns in present-day Japan is the rapid growth of its aging population, an increase which means more and more care workers are needed. In reality, however, caregivers are in desperately short supply. As part of the solution to the problem, the government and private sectors are introducing care robots in nursing homes.

66. take place
≡ occur

75. give ~ a cue
≡ give ~ a sign

85. in reality
≡ actually

85. in short supply
≡ insufficient

4

英語による言い換え（英英）の形で傍注を掲載しています。

Q-7 What are the government and private sectors introducing in nursing homes?

ST Which of the following is NOT true about *Mako-no-te*?

- a. It gives you cues so that you can infer its intentions.
- b. It makes you feel safe when you walk alone after dark.
- c. It helps you build an interpersonal relationship with it.

Lesson
2



A caregiver with a back-support device

Here are a few examples of robots at work. One is a back-support device which is designed to assist caregivers when they lift and move patients. Another type of robot provides services such as bringing tea. These robots satisfy practical needs, easing the burden of caregivers.

But there are other types of robots whose main function is to provide companionship and make the environment more friendly and livable. A robot baby seal is an example. Not only does it give comfort to the elderly, but it also gives a sense of security. Perhaps it is in this area that Okada's weak robots have a great potential for application.

Professor Okada and his team want us to think of robots as our companions. They point the way to a future in which people and robots can exist in harmony, learn to treat one another with respect, and, just possibly, enjoy one another's company.

101. point the way
to ~ ⇨ lead to ~



A robot bringing tea



Robot baby seals giving comfort to the elderly

生徒の興味・関心を高め、リテリング活動などにつなげられる豊富な写真を掲載しています。

Q-8 What robot is mentioned as an example of companion robots?

St Okada and his team see a future where
a. robots serve all human needs.
b. people don't need help from robots.
c. people and robots exist in harmony.

Wrap It Up!

本文内容の理解を、思考を伴う問いも交えながら段階的に行います。
A. 本文の主題の確認
B. 本文から推論させる問い
C. リテリングないし要約
D. 本文内容に関する自己表現活動

- A Professor Okada's robots are weak in the sense that
1. they cannot beat humans in board games.
 2. they need human help to complete their tasks.
 3. they do not have enough power to carry heavy packages.
 4. they are so fragile that they need to be handled with care.

- B Look at the pictures and read the explanations. Which of the following robots is considered "weak"? Why?



- (1) A robot which uses the elevator to deliver products to customers.
(2) A robot remotely controlled by shop staff to stock shelves with products.
(3) A cute robot which gazes at you, blinks its eyes, and wags its tail.

- C Summarize the main text. Here are some key words and phrases to help you get started.

Key Words & Phrases
independent, human interaction, cooperative relationship, the elderly

- D Based on what you have read, answer the questions below.

1. We have seen several examples of weak robots in this lesson. Which one interests you the most?
2. Okada says that "weakness is a virtue." What do you think your greatest weakness is? Can it also be viewed as your strength?

FE II, III, IV, V (See pp.184-186)

発信に使える表現をまとめた巻末付録「Functional Expressions」へのリンクを掲載しています。

Lesson
2

Another Point of View



Another Approach to Human-Robot Interaction

題材に関連した英文**Another Point of View**を配置。ウェブサイト、メッセージ、講演など多様なテキストタイプに触れられます。教師用指導書には**内容確認問題**も収録しています。

Professor Okada studies human-robot interaction by creating weak robots. But there are other approaches to this kind of study. Professor Ishiguro at Osaka University has been working on androids, or humanlike robots.

Androids used to belong in science-fiction movies, but now we come across them in every corner of our lives: in hotels, shopping malls, museums, and even theaters.

A play called *Sayonara* is going on in a small theater. Two women actors are talking to each other. The people in the theater know that one of the actors is an android which is remotely controlled by another actor. It speaks with the voice of a real woman and its movements are humanlike.



When the play starts, the people in the theater are all eyes on the movement of the android, but as the play goes on, they forget that one of the actors is an android. The android is so humanlike that they accept it as a real actor by the end of the play.

The android in *Sayonara* was created by Ishiguro Hiroshi, a robotics researcher known for his androids. He says that there are two steps in creating androids which will look fully human. First, you have to capture typical characteristics of humans—their expressions and body movements. Second, you need remote-control machines to transfer human speech and movements to the android. Ishiguro believes that this will lead to androids that look and speak like human beings.

Ishiguro has created many androids of famous people, including Natsume Soseki, Shibusawa Eiichi, Katsura Beicho, Matsuko Deluxe, and others.



Robotic technology is so advanced that the borderline between humans and androids is gradually disappearing. But not everyone feels at ease with androids. When androids seem almost human but are not quite human, many people feel uneasy. Some people say that androids are “creepy.” This creepiness is sometimes called the “uncanny valley.”

Ishiguro even made a copy of himself, which he named Geminoid HI. It speaks with his voice. When Ishiguro tilts his head, Geminoid HI tilts its head too. Geminoid HI speaks and behaves as if it were Ishiguro himself.

The android resembles Ishiguro so much that he sends it to conferences abroad instead of attending the conferences himself. He stays in Japan and controls Geminoid HI remotely through his computer. When the android speaks, people actually feel that Ishiguro is there in person.

Ishiguro is now working hard to cross over this valley. Before overcoming the creepiness, however, he needs to ask various questions: How do we express emotions? How do the facial muscles react to emotions? How often and when do we blink? What kind of gestures, both voluntary and involuntary, do we use when communicating with others? These questions will lead to a better understanding of human feelings and behavior, which in turn will help Ishiguro create a more humanlike android. In the end, the goal of his project is to discover what it means to be human.

自分の考えや調べたことを発表したり、本文内容から類推したりする活動「**Your Reaction**」を配置。ペアやグループで行うことも可能です。

Your Reaction

1. If you had an android which looked exactly like you, what would you want it to do?
2. Do you think you can make friends with an android?

FE II, III, IV, V (See pp.184-186)



Lesson
2



扉ページの問いを再掲。順を追って答えを考えていきます。

Issue in Focus What do you think the relationship between humans and robots will be in the future?

- Step 1** Listen to the dialog, and write “T” if the statement is true and “F” if it is false.
- 1. Yumi met Pepper and was fascinated by its cuteness. ()
 - 2. Jack wants robots to look more like humans. ()
 - 3. Professor Okada is now working on a self-driving car. ()

- Step 2** Listen to the dialog again and answer the following questions.
- 1. *Geminoid* made Jack and Yumi feel
 - a. sad.
 - b. angry.
 - c. happy.
 - d. uneasy.
 - 2. Jack likes *Mako-no-te* because
 - a. it is autonomous.
 - b. it looks like a human.
 - c. it works with a human.
 - d. it is Professor Okada’s invention.

Step 3 Fill in the blanks in the script while listening to the dialog one last time.

Step 4 Read the Issue in Focus and create a short story about a future with robots.

F E III, IV, V (See pp.185-186)

Weak Robots



Be sure to cover this page while working on steps 1 and 2.



Yumi: Robots are everywhere these days. I just came from the bank where I met....
Guess who!

Jack : Pepper!

Yumi: Then I went to a travel agency and met.... Guess Who!

Jack : Pepper again. 5

Yumi: Pepper and I are getting to be friends. He’s kind of cute. I wonder if he’s got a girlfriend.

Jack : Careful, Yumi. You’re entering the uncanny valley.

Yumi: What’s this “uncanny valley”?

Jack : Don’t you remember Ishiguro’s *Geminoid*? 10

Yumi: Oh yeah, sure. It’s an exact copy of Ishiguro himself.

Jack : He’s trying to make robots that are exactly like real people. But somehow they make you feel kind of uneasy.

Yumi: Actually, I saw *Geminoid* once on TV.

Jack : ① () 15

Yumi: A little uneasy.

Jack : To tell the truth, I want robots to look like robots and people to look like people.

Yumi: So I guess you like the “weak robots” we read about.

Jack : Absolutely. Professor Okada’s *Mako-no-te* doesn’t even try to look human.
② () The only thing it does is walk along 20
beside you and hold your hand. That’s the kind of robot I like.

Yumi: You make *Mako-no-te* sound like a toy. But Professor Okada has a serious point to make.

Jack : ③ () While the whole world is trying to
make self-driving cars and totally autonomous this and totally autonomous 25
that, Professor Okada has a vision of weak robots which work together with us.
That’s an awesome idea.

Yumi: It really changes your vision of the future.

Step 2のリスニングについてはスクリプトを隣ページに掲載しており、**自学自習用教材**としても扱えます。

22. have a point to make 指摘すべき点がある 25. this and that あれやこれや

Lesson
2

Language Resources

Words in the Box



各レッスン末に、語彙・表現のまとめとして
Language Resourcesを配置しています。



Sentence Activators

本文中から**発信に役立つ表現**
を取り上げ、例文とともに振り
返ります。
※本文中の**S**マークと連動。

relation

- interact with ~
- communicate with ~
- rule
- control
- (1)) with ~



aging society

- aging population
- pension
- elderly care
- (2)) home
- (3))



people

- researcher
- scientist
- roboticist
- designer
- user
- (4))
- (5))


Humans
&
Robots

robotics

- mathematics
- computer science
- information science
- (6))
- (7))



robot types

- android
- wearable device
- drone
- (8)) robot
- (9)) robot



use

- manufacturing
- transportation
- service at a restaurant
- medical care
- companionship
- education
- military
- security
- (10))
- (11)) and relief



本課のテーマに関する語彙・表現を
意味ごとにグループ分けし、穴埋め
テストを交えつつ整理します。

◆ Fill in the blanks with the words below.

Words autonomous / caregiver / collaborate / electronics / engineer / engineering / delivery / industrial / inventor / nursing / rescue

Study the sentences below, paying attention to the patterns printed in red.
Then try using the patterns in new sentences with your own ideas.

~という意味で

- 1 They are called “strong” robots, **in the sense that** they can work without human help. (p.24)
- ▶ This hotel is unique in the sense that it’s an old palace.
- ▶ _____

興味深い点は~

- 2 **What’s interesting about** the little cleaning robot **is that** he has become part of your family. (p.24)
- ▶ What’s interesting about our school is that we keep cows on campus.
- ▶ _____

~と言うかのように

- 3 STB bows, **as if to say**, “Thanks!” (p.25)
- ▶ Governments encouraged companies to start developing vaccines, as if to say, “On your mark, get set, go!”
- ▶ _____

観点

- 4 **From Okada’s point of view**, this weakness draws out our cooperative spirit.
- ▶ From my point of view, AI robots will take over 70 percent of our jobs. (p.26)
- ▶ _____

~に喜びを感じる

- 5 The parents **experience joy in** looking after the child. (p.26)
- ▶ The engineers experience joy in developing a new type of wheelchair.
- ▶ _____

Part 2 (Lesson4～7) の本文はセクション
分けなし、傍注ありの形です。

Lesson
4

3. cope with ~
≡ deal with ~

As a young boy of 17, Hugh Herr was one of America’s most prominent rock climbers. But he had a severe accident while climbing. In this lesson, we will find out how he coped with hardship and developed his career.

Hugh Herr was a born climber. By age 8, he had scaled the face of 11,627-foot Mt. Temple in southern Alberta, Canada. Later, he began climbing without a rope. He ascended tough climbing routes, some of which no adult had ever attempted before. By the time he was a teenager, Herr was one of the top rock climbers on the East Coast.

Climbing Accident

In January 1982, 17-year-old Hugh Herr and his friend, Jeff Batzer, age 20, set out to climb Mt. Washington. Located in New Hampshire, Mt. Washington is the highest peak in the Northeastern United States, at 6,288 feet. Their climb began in reasonable weather, but winters in New Hampshire can be brutal, and very quickly, the two boys were fighting 100-mile-per-hour winds. The temperature dropped to a windchill factor of minus 110 degrees Fahrenheit.

13. set out to ~
≡ start to ~

18. windchill factor
体感温度
18. minus 110 degrees
Fahrenheit
≡ minus 79
degrees Celsius



Mt. Washington

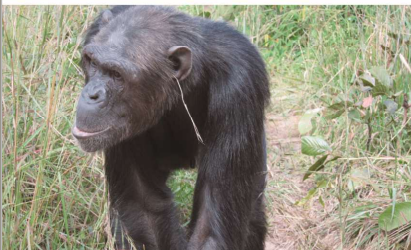


Part 3 (Lesson8～10) の本文はセクショ
ン分け・傍注ともになしの形です。

Lesson
9

People have long thought that culture is what makes humans different from other animals. But recent studies have shown that this is no longer the case. Let’s examine various examples of animal culture.

Julie started a fashion fad. The 18-year-old chimpanzee stuck blades of grass into her ears and went around a wildlife sanctuary in Zambia showing off her new accessories. The other chimpanzees couldn’t take their eyes off her. Pretty soon, they were also sticking grass in their ears. Eight out of the 10 in the group took up the fad.



Grass-in-the-ear fashion

Julie died soon after, but her grass-in-the-ear fashion trend still lives on among her followers. The tradition arose spontaneously and spread through social networks, very much like a human fad.

This is just one of many surprising examples of animal behavior that lead animal researchers to talk about animal “culture.”

Definition of “Culture”

It was once thought that only human beings have culture. We have art, science, and music; animals have only instinct. But that attitude turns out to be misguided. Many new findings about animal behavior tell us that “culture,” as many biologists now understand it, is not exclusive to humans.

The idea that animals have culture may seem like nonsense. If “culture” means symphony orchestras, novels like *The Tale of Genji*, and museums like the Louvre, it is obvious that animals do not have culture. But that is not how these scientists define culture.

Andrew Whiten, an evolutionary psychologist, defines culture as behavior that can be passed from one individual in a group to another individual, and which then spreads across the group and can be passed down through generations.

- Q-1 How did Julie’s grass-in-the-ear fashion spread after she died?
- Q-2 What do many new findings about animal behavior tell us?



Part 2・3では、雑誌やブログなど、本文のテキストタイプに応じた紙面デザインを採用しています。

Appendix
Lesson 2

Wrap It Up! (p.29)

C Model

Many robot engineers think that robots which are independent of human beings are more advanced than those which are dependent on humans. Professor Okada Michio, however, has a very different idea. He is working on robots which are designed *not* to work without human interaction. He calls them “weak” robots. Their weakness causes them to form a cooperative relationship with humans. They become friendly little helpers. One area where weak robots will be useful is in caring for the elderly. Weak robots can provide companionship and make the environment more friendly and livable.

Addressing the Issue (p.32)

Step 4 Model

It was a dark and stormy night. Mysterious shadows appeared. A stray cat dashed across Jeremy’s path.

Jeremy had stayed late at cram school and missed the last bus. He had been walking on dark and scary streets for nearly an hour. There was not another person in sight.

In 2020, Jeremy would have been scared to death. But this was 2036, and Jeremy had no fear. He was not alone. The stray cat was being chased by AiNiBot, Jeremy’s constant companion, protector, and friend.

AiNiBot was the latest model of a weak robot helper. Half cat and half dog, AiNiBot followed Jeremy’s every command, understood his moods, and protected him from danger.

With AiNiBot by his side, Jeremy walked on into the night, whistling cheerfully, unafraid.

各レッスン「Wrap It Up!」および「Addressing the Issue」の解答例を巻末付録に掲載。自学自習にも活用できます。

各課本文の新出語は、巻末にまとめて掲載しています。

New Words & Phrases

Lesson 1

Section 1
Lera Boroditsky [ləɾə bərədʲɪtskiː]
cognitive [kəɡnətɪv]
California [kæləfɔːrniə]
San Diego [sændiˈeɪɡoʊ]
magical [mædʒɪkl]
transmit [trænsmɪt]
differ [dɪfər]
vocabulary [vəʊkəˈbjələri]
forth [fɔːrθ]
data [deɪtə]
weigh [weɪ]

Section 2
Aboriginal [æbəˈrɪdʒənəl]
Kuuk Thaayorre [kúːk tɑːɔːr]
cardinal [kɑːrdɪnəl]
northeast [nɔːrθeɪst]
orientation [ɔːriəntéɪʃən]
toward(s) [tɔːrəd(z)]
landscape [lændskeɪp]
dramatically [drəməˈtɪkəli]

Section 3
realm [reɪlm]
exact [ɪɡzækt]
quantity [kwántəti]
folk [fólk]
linguistic [lɪŋɡwɪstɪk]
spectrum [spéktrəm]
boundary [baʊndri]
differentiate [dɪfərənʃiət]
lifetime [laɪftaɪm]
distinguish [dɪstɪŋɡwɪʃ]
categorize [kætəɡəraɪz]
perceptually [pərséptʃuəli]
discriminate [dɪskrɪmɪnət]
whereas [(h)weərəz]

Section 4
specify [spesəfaɪ]

requirement [rɪkwaɪərmənt]
beauty [bjúːti]
diversity [dəvəːrsəti]
reveal [rɪvɪl]
ingenious [ɪndʒɪniəs]
tragic [trædʒɪk]

Another Point of View
monolingual [mɒnəlɪŋɡwəl]
neuroscientist [njuːərəʊsáɪəntəst]
bilingualism [baɪlɪŋɡwəlɪzəm]
illogical [ɪlədʒɪkl]
grammatically [ɡrəməˈtɪkəli]
grammatical [ɡrəməˈtɪkəl]
executive [ɪɡzékjʊtɪv]
general [dʒénərəl]
regularly [ˈregjələrli]
pop up ⇨ appear unexpectedly
sort through ～ ⇨ look through ～
frequently [frɪkwəntli]
efficient [ɪfɪjənt]
serve as ～ ⇨ be suitable for ～
conventional [kənvenʃənəl]
conventional wisdom
disadvantage [dɪsədʒvæntɪdʒ]
deficient [dɪfɪjənt]
definite [dɛfənət]
strengthen [streŋkθən]
creative [kriˈeɪtɪv]
simultaneously [səmltɛniəsli]
constantly [kɒnstəntli]
occasional [əkəɪʒənəl]
podcast [pɒdkæst]
rewarding [rɪwɔːrdɪŋ]

言語活動に役立つ表現のリストFunctional Expressionsを
巻末に掲載。議論、やり取り、英作文等に活用できます。

Functional Expressions

I. Agree / Disagree

- 1 Saying you agree
- a. I absolutely [completely] agree with you about ...
b. I'm of the same opinion.
c. I'm with you there.
d. That's (just) what I was thinking.
e. You're right about ...
f. I share your opinion about ...
- 2 Saying you partly agree
- a. I see what you mean, but ...
b. I agree in principle, but ...
c. I agree up to a point, but ...
d. You are right on that point, but ...
e. You could say that, but ...
f. I like your idea, but ...
g. Yes, but on the other hand, ...
h. Yes, but don't you think ...?
i. I'm with you, but I would have to add that ...
- 3 Asking if someone agrees
- a. Do you go along with that?
b. I wonder if you would agree that ...
c. I wonder if you would agree with ...
d. ..., wouldn't you say?
- 4 Saying you disagree
- a. I have to disagree with you there.
b. I have a different opinion about that.
c. Sorry, but I don't see it that way.
d. Actually [In fact], I think ...
e. I'm not at all [entirely] convinced ...
f. I see things differently.
- 5 Expressing strong protest
- a. You are simply wrong when you say ...
b. It is simply not true that ...
c. I just cannot accept your idea that ...
d. I just don't see how you can say that ...

- e. There is no way that I could ever agree that ...
- 6 Acknowledging disagreement
- a. I guess we see things differently.
b. We'll just have to agree to disagree about ...
c. There's no point in continuing to discuss ...
- II. Opinion / Reason / Example
- 7 Expressing your opinion
- a. I think ...
b. In my view [opinion], ...
c. It seems to me ...
d. From my point of view, ...
e. As far as I'm concerned, ...
f. This is what I think about ...
g. My idea about that is that ...
h. Would you like to hear my opinion?
- 8 Asking someone's opinion
- a. What do you think about [of] ...?
b. What is your impression of ...?
c. How do you feel about ...?
d. What is your reaction to ...?
e. What would you say to ...?
f. I'd be glad to have your view [opinion] on ...
- 9 Expressing reasons for your opinion
- a. Let me explain. You see ...
b. Let me explain how [why / what / where / when] ...
c. If I could explain: ...
d. The reason I believe this is that ...
e. Considering what I have learned, it is probable that ...
f. On the basis of what I understand, I would say that ...
g. From my own personal experience, I would say that ...

- 10 Giving a source for an opinion
- a. I read in the newspaper that ...
b. I heard a rumor that ...
c. I got it straight from the horse's mouth that ... (= I'm absolutely sure that ...)
d. It is widely believed that ...
- 11 Correcting someone's opinion
- a. As a matter of fact, ...
b. Hold on a minute.
c. I think it might be more correct to say ...
d. There's another way to look at ...
- 12 Giving an example
- a. Take ..., for example [for instance].
b. Let me give you an example.
c. To give you an example of this [what I mean], take ...
d. Here is another case of ...

III. Certainty / Uncertainty

- 13 Expressing certainty or belief
- a. There is absolutely no doubt that ...
b. Nobody can question the fact that ...
c. It is beyond dispute that ...
d. I strongly believe that ...
e. I'm totally convinced that ...
f. There is not the slightest doubt that ...
- 14 Saying you are not sure
- a. I don't know, but I think ...
b. I'm not sure, but I suppose ...
c. I don't know exactly, but I guess ...
- 15 Qualifying a statement
- a. I know that it's silly, but ...
b. It's not scientific, but ...
c. There is no evidence, but ...

- 16 Expressing tentative conclusions
- a. I don't have any evidence for this, but I believe that ...
b. It's not certain, but there's a pretty good chance that ...
c. I wish I had a good answer, but really I can only guess that ...

- 17 Saying you don't know
- a. I don't know anything [much] about ...
b. I'm afraid I have no idea ...
c. Not that I know of.

IV. Paraphrase / Suggestion

- 18 Saying something in a different way
- a. What I mean is, ...
b. In other words, ...
c. Let me put it another way: ...
d. Perhaps it would be more accurate to say that ...
- 19 Supplying information
- a. Maybe you are thinking of ...
b. Is it possible that you are thinking of ...?
c. If I remember correctly ...
- 20 Saying that someone should do something
- a. I think we [you] should ...
b. Why don't we [you] ...?
c. It might not be a bad idea ...
d. I would recommend ...
- 21 Saying that someone should not do something
- a. I don't really think we [you] should ...
b. We [You] shouldn't ...
c. We'd [You'd] better not ...