GLOSSARY

robot – a machine that performs some action or a series of actions independently, especially actions that humans would normally perform
* Robots can be programmed to find and deactivate land mines.

production – manufacturing; the process of making, building, or creating something
* If the prototype is accepted, we should be able to start full production next month.

to automate – to covert or change something into a process that happens by itself, without the involvement of people
* If we can automate the most boring tasks, our employees will be able to focus on the more creative and interesting parts of their work.

factory – a large building where something is made or put together
* Many people are concerned about the wastewater being produced by the tire factory.

eye-opening – raising one's awareness and understanding of something; providing information that one did not have previously; making one realize the importance of something and its consequences, either good or bad
* The film was an eye-opening exploration of the life in orphanages.

routine – standard; repetitive; happening in the same way many times, without changing
* His morning routine is always the same: He wakes up when the alarm goes off, starts a pot of coffee, and takes a shower.

hazardous – dangerous; able to cause injury or death
* Please make sure that hazardous cleaning supplies are locked up and stored out of the reach of children.

alongside – next to; by
* The city is building some walkways and bike routes alongside the river.

sensor – a device or machine that receives inputs and measures the quality or amount of something
* Anyone who works in the nuclear power plant is required to carry a sensor that beeps if it detects a high level of radiation.

tricky – challenging and difficult to do
* These math problems were tricky at first, but now I understand them.

to program – to code; to provide instructions to a computer or machine so that it performs the desired action
* Can you program a vacuum cleaner to clean the house by itself every three days?

calibration – the process of setting the base level of something on a machine so that the data or actions can be compared with other data or actions
* The instructor checked the students' calibration of the scales and then told them to begin weighing the powders.

riot – a protest; a large group of people who gather to openly display their anger and demand that something be changed
* When the policeman shot an unarmed child, it led to riots for several days.

on (one's) hands – one's responsibility; something that one has and must deal with or resolve
* If this plan fails, we'll have a lot of unhappy parents on our hands.

wave of the future – something that will be popular and commonplace in the future, but is still new and uncertain
* Kyle thinks spinach-flavored ice cream is the wave of the future, but we all think he's crazy.

to object to – to show one's opposition to something; to disagree with someone or something; to think and say that something is a bad idea
* What would you do if your parents objected to your fiancée?

indispensable – necessary and required; being needed under any and all circumstances
* A bottle of hand sanitizer is indispensable during flu season.

typewriter – a machine that produces typed letters on a piece of paper, with keys that are hit by fingers to press a small hammer against ink and a piece of paper
* In our office, we use computers and printers for almost all documents, but we have one typewriter that we use to fill out printed forms.

ESL Podcast 1080 – Automating Production

COMPREHENSION QUESTIONS

1. What does Yves mean when he says "the demonstration was eye-opening"?
a) The demonstration made him aware of new things.
b) The demonstration was difficult to see.
c) The demonstration involved bright colors and flashing lights.

2. Which type of tasks would be the most boring for human workers?
a) Routine tasks.
b) Hazardous tasks.
c) Tricky tasks.

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WHAT ELSE DOES IT MEAN?

tricky
The word "tricky," in this podcast, means challenging and difficult to do: "Some of those dance moves are really tricky!" A "magic trick" is something that an entertainer does to make it seem as though he or she is performing magic: "We can't figure out how the magician did that magic trick!" A person who is "tricky" is deceitful or dishonest and trying to make someone do or believe something: "Don't believe everything Heather says. She's pretty tricky and is very good at getting other people to do what she wants." On Halloween, an informal holiday, children in costumes knock on doors and say "trick or treat" to ask for candy. Finally, the phrase "to do the trick" means that something will work as intended or provide a solution: "Keith's glasses broke, but some duct tape should do the trick until he has time to buy a new pair."

on (one's) hands
In this podcast, the phrase "on (one's) hands" means one's responsibility, or something that one has and must deal with or resolve: "If that child dies, it will be on the surgeon's hands." The phrase "in (someone's) hands" means being cared for or taken care of by someone: "Do you feel your children are in good hands at school?" The phrase "to get out of hand" means to become uncontrollable: "This party is getting out of hand. Should we call the police?" Finally, the phrase "to get (one's) hands on (someone)" means to catch someone when one is very angry with that person: "When I get my hands on that liar, I'll make him admit what he has done!"

CULTURE NOTE

Robotic Competitions for Students

American "policymakers" (legislators; people who create laws) and educators want to increase students' interest in "STEM" (science, technology, engineering, and mathematics) "fields" (topics; areas). One way of doing that is to create competitions for students to gain "real-world experience" (experience actually doing something, not just reading and learning about it) in related industries, such as robotics.

One of the best-known robotic competitions for students is the FIRST Tech Challenge, organized by a nonprofit organization called FIRST (For Inspiration and Recognition of Science and Technology). In the Challenge, students in grades 7-12 (approximately 12-18 years old) design, build, and "program" (provide instructions for a computer) their robot to compete against other teams using engineering "principles" (guiding facts and theories). Students not only develop their engineering and programming skills, but also improve their "teamwork skills "(ability to work with others as part of a team) as they compete for a "spot" (an opening; a vacancy) in the World Championship. Winners receive college "scholarships" (money that can be used to pay for a college education).

BEST (Boosting Engineering, Sciencem and Technology) Robotics is another competition that targets middle school and high school students who might be interested in "seeking" (looking for; trying to get) a "career" (job) in engineering. Teams of students are given certain "parts" (pieces) that they can use to build their robot and a "finite" (limited) list of other parts that they may use. They have six weeks to build the robot that can compete in a game task. They also must make a written report about their experience designing, building, and programming the robot.

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Comprehension Questions Correct Answers: 1 – a; 2 – a

COMPLETE TRANSCRIPT

Welcome to English as a Second Language Podcast number 1,080 – Automating Production.

This is English as a Second Language Podcast episode 1,080. I'm your host, Dr. Jeff McQuillan, coming to you from the Center for Educational Development in beautiful Los Angeles, California – home of Hollywood, home of the stars, home of ESL Podcast.

Visit our website at ESLPod.com. Take a look at our special courses in Business and Daily English. Read our blog each week and become a member of ESL Podcast. All that can be done on our website. And did you know that we're on Facebook, too? Yeah. Seriously. Go to facebook.com/eslpod and like us.

This episode is a dialogue between Lauren and Yves about making or producing things automatically, with machines. Let's get started.

[start of dialogue]

Lauren: Wow, that was an impressive demonstration of how robots can be used in production. I think that we need robots like those to automate some of the functions in our factories.

Yves: I admit the demonstration was eye-opening, but I don't think the technology is there yet to allow us to replace people with robots.

Lauren: No, not for many of the functions, but we could have them do some of the more routine and hazardous tasks.

Yves: You mean have them work alongside our current workers? I'm not sure how our workers would take it. Wouldn't the robots get in the way?

Lauren: Not with their sophisticated sensors, which allow them to avoid other people or machines.

Yves: I don't know. Introducing automation would be tricky.

Lauren: What's important is that they'll increase production and reduce accidents. The demonstration showed how easy it is to program one of those robots, even when fine calibration is required.

Yves: I'm thinking of the people in the factories. Wouldn't we have a riot on our hands if we tried to replace people with robots?

Lauren: It's the wave of the future.

Yves: So you wouldn't object to a robot replacing you?

Lauren: Me? They'll never replace me with a robot. I'm indispensable.

Yves: Just like the typewriter?

[end of dialogue]

Our dialogue begins with Lauren saying, "Wow, that was an impressive demonstration of how robots can be used in production." If something is "impressive," it's something that we think is very good. It makes an impression on us. It makes us remember it. A "robot" (robot) is a machine that performs some action, often an action that a human being would do. Robots are often associated with, oh, I don't know, characters such as R2D2 in Star Wars. That might be considered a robot. The word "production" means manufacturing – the process of making, building, or creating something.

Lauren says, "I think that we need robots like those to automate some of the functions in our factories." The verb "to automate" (automate) means to do something that doesn't require your involvement or the involvement of a human being. We have another very common term, "automatically" – an adverb meaning that something is done by a machine or by a computer that doesn't require anyone to go and do anything. It just happens. "To automate" is the verb from which we get the adverb "automatically" or the adjective "automatic."

Lauren thinks that her company should get some of these robots to automate some of the functions, some of the things that are done in their factories. A "factory" (factory) is a place where things are built – physical things typically like cars or, I don't know, computers, bookshelves. Actually, I did my own bookshelves. I ordered a set of bookshelves from a company, and they send you the wood, right? And then you have to paint the wood yourself and then put them together. And they look really nice, I think. They're in my office. You should come and see them someday.

Anyway, a factory is a place where things are made and then sold to people already put together. (Real men put their own bookshelves together, you see.) Yves, who is a man – there's also an English name Eve (Eve), which is a

woman's name, but here it's a man's name because it's (Yves) – Yves says, "I admit the demonstration was eye-opening." When we say something is "eye (eye) – opening," we mean that it provides you information, sometimes surprising information, that you didn't know before – information that makes you realize the importance of something. It could be something good or something bad.

Yves says this demonstration, whatever they saw, was "eye-opening," but he doesn't think "the technology is there yet to allow us to replace people with robots." If we say something "isn't there (there) yet," we mean it isn't advanced enough or it hasn't developed enough to be useful. In this case, it's not developed enough to allow Yves and Lauren to replace people with robots, to have robots doing the jobs of humans. Lauren says, "No, not for many of the functions, but we could have them do some of the more routine and hazardous tasks."

Something that is "routine" (routine) is something that happens in the same way over and over again, typically without changing. We might use also the adjective "repetitive." "Repetitive" comes from the verb "to repeat" (repeat), which means to do something again – a second, third, fourth, and fifth time and so forth. "Hazardous" (hazardous) comes from the word "hazard," which means danger.

So, something that is hazardous is something that is dangerous, that could hurt you or perhaps even kill you. We use this word "hazardous" sometimes with chemicals – liquid or other substances that might be dangerous. Hazardous chemicals would be chemicals that could hurt you or even kill you. Here, we're talking about hazardous tasks – things that you do. Yves says, "You mean have them work alongside our current workers?" "Alongside" (alongside) means next to.

Yves is asking Lauren if she thinks the company should have the robots working next to or alongside the workers, the human workers they have now. He says, "I'm not sure how our workers would take it." Here, the expression "take it" means how they would accept it, how they would react to it. He asks, "Wouldn't the robots get in the way?" If something "gets in the way," it prevents you from doing something you would otherwise do. It's what we would call an "obstacle" (obstacle).

An "obstacle" is something that gets in your way, that prevents you from doing what you want to do. It's some difficulty you have to overcome, perhaps. Lauren says, "Not with their sophisticated sensors which allow them," meaning the robots, "to avoid other people or machines." A "sensor" (sensor) is a machine

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that is able to measure something. It might be temperature. It might be distance. It might be some other physical characteristic that is important.

Usually sensors are put on things so that some other action happens when a certain thing is detected. So, you might have a temperature sensor for example in, I don't know, your oven, where you cook things, and when it reaches a certain temperature, the oven may turn off. That's one possible use of a sensor. Lauren says the robots have sensors that will detect whether they are close to other people or other machines and therefore not get in the way.

Yves says, "I don't know. Introducing automation would be tricky." Something that's "tricky" (tricky) is something that's difficult, something that would require very careful planning or very careful implementation. When you actually have to do it, you have to be careful how it's done. Lauren says, "What's important is that they'll" – meaning the robots – "they'll increase production and reduce or lower the number of accidents. The demonstration showed how easy it is to program one of those robots, even when fine calibration is required."

"To program" (program) something means to give it instructions – specifically, to give a computer or a machine instructions. We all know about "computer programming," which of course is necessary for the machines that we call "computers" to operate. More recently, people have started using the word "coding" (coding) to refer to computer programming because the language, if you will, that computer programming is written in is called "code" (code). Lauren says that these robots can be programmed even when fine calibration is required.

"Calibration" (calibration) is the process of making sure that a machine is accurate in what it is doing. For example, if you are going to weigh something, if you want to see how much something weighs, you use something in English called a "scale" (scale). But the scale has to be calibrated. You have to make sure that the scale is giving you the correct number, the correct amount. What Lauren is talking about is calibrating robots to make sure that they're accurate and do exactly what they're supposed to do.

Yves says, "I'm thinking of the people in the factories. Wouldn't we have a riot on our hands if we tried to replace people with robots?" A "riot" (riot) is a violent protest. The expression "on our hands" means something that is your responsibility and that you have to deal with. Usually it's something negative that happens, something bad that happens, and you have to deal with it. You have to take care of it. Usually because it's your responsibility. Yves is worried that if they put computers – or rather, robots – into the factories, they would have a riot on their hands. The workers would protest.

Lauren says, however, "It's the wave of the future." This expression, "the wave (wave) of the future," means that it is something that will be very common in the near future – within a year or two, or perhaps within ten years. "The wave of the future" is the way things are going. It's something that will be common in the future, even though it's not very common right now. Yves says, "So you wouldn't object to a robot replacing you?" "To object (object) to" something is a phrasal verb meaning to disagree with someone or something, to say something is a bad idea.

Yves is asking Lauren if a robot could replace her, if she would think that's a bad idea, the way she is proposing to replace workers with robots. Lauren says, "Me? They'll never replace me with a robot. I'm indispensable." Something that is "indispensable" (indispensable) is something that is necessary, something that is required. The opposite would be "dispensable." If something is dispensable, you don't need it. You can get rid of it. If it's indispensable, it is not dispensable; you must have it. Lauren thinks she's indispensable.

Yves then gives her a comparison, "Just like the typewriter?" A "typewriter," for those young ones out there who don't know, is a machine that we used to use back before computers and are still used in some places, of course, that you don't need to plug in. Well, I guess you can plug in electric typewriters, but basically they're machines used for putting ink marks on paper. Instead of having a printer, we had things called a "typewriter."

I'm joking, of course. Most of you probably remember typewriters, but typewriters are no longer used as much as they used to be, and that's the joke that Yves is making here. Lauren think she's indispensable, but people thought typewriters would be indispensable, and now they are in fact, for the most part, dispensable. Although I actually have an old typewriter sitting on my desk, so someday when we don't have any power here in Los Angeles, I'll still be able to type on my typewriter.

Now let's listen to the dialogue, this time at a normal speed.

[start of dialogue]

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[end of dialogue]

Our scriptwriter is indispensable. We couldn't live without her. I speak, of course, of the wonderful Dr. Lucy Tse. Will a robot someday be able to do her job? I don't think so. She's just that good.

From Los Angeles, California, I'm Jeff McQuillan. Thank you for listening. Come back and listen to us again right here on ESL Podcast.

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