Of course, there are other attributes that are uniquely human: no other species wears clothes, creates representational art, or watches four hours of television a day. But when Turing proposed his test (see Section 1.1), he based it on language because language is intimately tied to thinking in a way that, say, clothing is not. In this chapter, we will explain how a communicating agent works and present a simplified version of English that is sufficient to illustrate the workings of the agent's major components.

22.1 COMMUNICATION AS ACTION

SPEECH ACT

One of the actions available to an agent is to produce language. This is called a **speech act**. "Speech" is used in the same sense as in "free speech," not "talking," so typing, skywriting, and using sign language all count as speech acts. English has no neutral word for an agent that produces language, either by speaking or writing or anything else. We will use **speaker**, **hearer**, and **utterance** as generic terms referring to any mode of communication. We will also use the term **words** to refer to any kind of conventional communicative sign.

Why would an agent bother to perform a speech act when it could be doing a "regular" action? Imagine a group of agents are exploring the wumpus world together. The group gains an advantage (collectively and individually) by being able to do the following:

- **Inform** each other about the part of the world each has explored, so that each agent has less exploring to do. This is done by making statements: *There's a breeze here in 3 4.*
- **Query** other agents about particular aspects of the world. This is typically done by asking questions: *Have you smelled the wumpus anywhere?*
- **Answer** questions. This is a kind of informing. *Yes, I smelled the wumpus in 2 5.*
- **Request** or **command** other agents to perform actions: *Please help me carry the gold.* It can be seen as impolite to make a direct requests, so often an **indirect speech act** (a request in the form of a statement or question) is used instead: *I could use some help carrying this* or *Could you help me carry this?*

  INDIRECT SPEECH ACT
- **Promise** to do things or **offer** deals: *I'll shoot the wumpus if you let me share the gold.*
- **Acknowledge** requests and offers: *OK.*
- **Share** feelings and experiences with each other: *You know, old chap, when I get in a spot like that, I usually go back to the start and head out in another direction*, or *Man, that wumpus sure needs some deodorant!*

These examples show that speech acts can be quite useful and versatile. Some kinds of speech acts (informing, answering, acknowledging, sharing) have the intended effect of transferring information to the hearer. Others (requesting, commanding, querying, leopard alarm) have the intended effect of making the hearer take some action. A dual purpose of communication is to establish trust and build social ties (just as primates groom each other both to remove fleas and to build relationships). This helps to explain what is communicated in exchanges such as "Hello, how are you? Fine, how are you? Not bad."