

Q&A: HUMAN AND ANIMAL COMMUNICATION

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Aren't humans just different, not better?

Several students responded to the chapter by objecting to the idea that humans are superior to animals. This sort of criticism took several forms. For example, Maddy and Zaida both suggested that there may be no interesting sense in which human communication is more advanced than animal communication; it's just that we're all adapted to our own environmental niches in different ways:

...human and nonhuman communication can appear to be equally unique (pardon the oxymoron). [...] Much of what results in evolution is due to an external natural pressure that makes these adaptations a kind of requirement for survival. Therefore, it is this aspect of what constitutes an adaptation and how that has played a role in human communication versus nonhuman communication, that could make both human and nonhuman communication "equally unique." This is because, both forms of communication sufficiently meet their purpose of best enabling a species's survival or, in this case, success of communication.

To give an example of this, consider a piece of research referenced by Harris which shows how humans, in comparison with apes, are capable of superior nonverbal communication by gesturing, "[h]owever, apes only ever point in order to request things, and do not point simply to draw attention or to inform..." (25). Within the author's chosen parameters, as discussed above, this example does make for a compelling comparison. However, when the practical function of such a communication is taken into consideration, the difference in uniqueness can become less clear. As a species, humans have evolved in such a way that requires this form of communication via gesture, whereas apes have not, since no such adaptation was ever acquired. The survival pressure of a human versus an ape deviated over time, thus creating essential adaptations in accordance with their unique survival pressures. Once this aspect is understood, it can seem that the more "limited" form of gesturing displayed by apes is entirely sufficient for their communication. Therefore the apes gesturing could be seen as unique, just as with human communication, because both forms meet the respective intended goal of each species.

—Maddy

...perhaps birds lack this so-called complexity of language because it is not necessary for their survival. In the novel *Gulliver's Travels*, the author, John Swift, uses the story to explore this idea if whether humans are inherently evil or if evil is learned behavior. In the story the talking horses did not have a concept and therefore did not have a word that meant "to lie." Although this is a story, many species do not have a concept of lying and therefore the expression of it in their language is absent. This highlights the fact that lying isn't necessary for their survival as opposed to humans where lying is said to be a sign of personality development and is commonly said to be necessary for our survival. Moreover so, the point I am trying to emphasize is that

perhaps the language of non-humans are perfectly structured for the survival of that particular species, there is no need for the same type of complexity we find on our own language. —Zaida

There is a sense in which these points are clearly correct. Every species communicates in a unique way, and their way of communicating is the result of evolution. To some extent, this evolution took place because the forms of communication in which they engage are adapted to their biological niches.

(Of course, not all biological evolution is driven by adaptation. Some is the result of random drift, and some traits evolved for one function and got repurposed for some other function. There are good reasons to think that some aspects of human communication have complex, accidental evolutionary histories like this. For example, it seems likely that many of the brain structures that now process language originally evolved for other purposes, such as singing or perhaps just thinking complex thoughts. As a result, they may not be perfectly adapted to the things for which we currently use them. And of course, they're still evolving! I'll say a bit more about evolution below.)

All of this is compatible with what I say in the chapter, I think. Bird communication evolved for the needs of birds, and they presumably lack the other cognitive capacities that would be necessary to make use of the complexities of human language. So, the rest of my book is about trying to say what the underlying psychological characteristics of humans are that make it possible for us to use language to do things. Birds do not have these characteristics! Of course, they have others that we lack, which brings me to another of Zaida's points:

...the claim that the signals or language of non-humans such as birds are overall simpler than the language of humans, was immensely unsatisfying. The songs of a bird are unique, and to compare the uniqueness and very different language of a bird to the unique language of human beings undermines the uniqueness of the bird. Deeming the uniqueness of a bird's language limited and less unique than the human language is not valuing their uniqueness at all. If anything, comparing the language of a bird to human language is a clever way of trying to emphasize the complexity of the human language. I say this because humans cannot communicate the way birds do at all. We can only infer the lengths that their language can go. If I were to attempt to whistle like a bird to express something to my friend and change the tone in my whistle to call on another person in the room, neither of them would know what I am trying to express or say. —Zaida

I think you're absolutely right to point out that birds can do things that we can't. (Dayana made a version of this point too.) This and some other feedback I've gotten leads me to think that I have misrepresented my views in some ways in the chapter, and that I need to revise it to remove the whiff of human chauvinism that you and some other readers are getting. In particular, I am going to point out early on that just because we can do many things that no other animals can't, that does not mean that there is nothing they can do that we can't. For example, I can't give you directions to a distant patch of flowers by dancing, and I can't attract a mate underwater or from treetop to treetop from many miles away by singing. I can't secrete a chemical that, in sufficient concentration, makes other nearby humans stop mating. And so on. This is all completely correct, and I am going to revise the chapter to emphasize it.

Still, this is compatible with my main point in the chapter, which is that there are some relatively clear ways in which human communication is more powerful and flexible than any animal communication—at least, any animal communication *that we know of*...

Humans, in the face of higher forms of intelligence, would be like dogs trying to use syntax when asking for food or comprehend math to calculate a jump over a fence. —Oscar Martinez

This is quite right. I certainly would not claim that there could be no more efficient forms of communication than what we have. Of course, we have even invented some. Computers can communicate with one another in far more efficient and information-rich ways than we can do with each other. And you're right that there could be aliens who are far more advanced than us. Indeed, we should not rule out the possibility that there are forms of animal communication here on earth that are much more powerful and flexible than anything I discuss in the chapter. For example, we could discover that the incredibly complex colorful patterns that cuttlefish display on their skin have a rich syntax and semantics that we just haven't decoded yet. Like all scientific claims, all of my claims in the chapter can be interpreted with an implicit hedge, "at least according to the current state of our best evidence".

Additionally, species who do have a complex language similar to that of the human language, such as whales, especially killer whales, their language is perfectly designed in its own ways just like the language of human beings. It would be wrong to deny or difficult to successfully compare complexities considering that killer whales have an expanded limbic section of their brain, the part of the brain that holds memory and emotions. Their limbic system is bigger than that of a human. Researchers say that the depth of their emotional bonds with other whales may even outrank the bonds that humans hold with one another ("Blackfish." IMD, IMDb.com, 26 July 2013.) Because the brains of humans aren't structured in the way that the brains of whales are structured, we have no experiential knowledge of the depth of these emotional bonds that these whales have, let alone their language. We can only infer what those bonds may be like just in the way that we can only speculate on what it is they talk about. —Zaida

This is a very interesting phenomena, thanks Zaida. There are many non-communicative forms of animal behavior that it could be interesting to compare to humans, and of course I do not think that we are "more advanced" than animals in every way. (I'm not even sure what that would mean.)

In particular, I want to be clear that I don't take anything that I say in this chapter to give us reason to think that humans are morally superior to animals, or that we should take their rights less seriously than those of humans. I view it as a fascinating fact about humans that we have such complex ways of communicating with one another, and I want to figure out how we do it, but that on its own gives us no reason to think that humans have greater inherent worth than other creatures. I am a vegetarian animal lover, after all!

Syntax

In the diagram on page 6, the claim is that our complex sentence structure is a key element to our advanced language. However, I wonder if we would still view it as complex if we simplify this

sentence structure to something without the “complementizer” or full phrases. If we argue that other species can communicate on a simple level, then if it the seemingly “unimportant” sentence components which advance our language? What if the “Jules heard that Butch shot Vincent” was simply rewritten as “Jules heard. Butch shot Vincent”? —Darya Babaytseva

It’s true that it’s the boring, merely grammatical words that do a lot of the work of allowing us to express complex thoughts: a, the, that, in, is, etc. Without going into the technical details, I can say that these “functional” words actually have extremely complex meanings. In fact, semanticists spend a lot more time studying their meanings than those of nouns, adjectives, and the like. I own at least five or six different books about the meaning of the word “the”, several about “or”, and so on. What I find interesting about all this is that whereas an average person can tell you something informative about what a noun like “dog” means, they will be almost powerless to explain the meanings of these functional terms. So although we clearly “know” the meanings of these words in some sense, this knowledge is not stored in a place where we can introspect it.

While reading, “What Makes Human Communication Special?”, it’s not hard to notice that human speech is often compared to that of other animals such as apes and bees. While bees and apes don’t speak directly, like humans do, they communicate in other ways like dancing. While discussing these different means of communication, Harris dives into the particular structure that human communication has, such as syntax, which is seen in the communication of other animals. For example, bees dance to show other bees directions. The length of their “waggle run” is the distance and the angle is the direction. My question here though, is how are these examples of syntax? Syntax is the arrangement of words and phrases to create well-formed sentences in a language. For example, saying “That girl is pretty” shows syntax in the human language. But, even though there aren’t words, the little bee dance would be only two words which isn’t exactly enough to form a complete sentence which then wouldn’t show syntax. For example putting the words girl and pretty together doesn’t form a complete sentence, but rather a half thought. The idea is there, but there should be more to form a complete sentence, which is syntax in communication. —Alexandra Narinskiy

In the chapter I tried not to use the word “syntax” to describe things other than language, for roughly the reason that you say: linguists tend to define “syntax” so that it only applies to the kind of structure possessed by human sentences and phrases. This is not always the case, though. In the paper on Berwick that I cite in the chapter, they discuss the syntax of birdsong, and show that many of the syntactic concepts that have been developed to study human languages can be usefully applied to birdsong.

What’s more important is that we recognize that some animal signals have interesting structure, and sometimes their meanings may even systematically depend on this structure in a way that is analogous to the way that the meaning of a sentence depends on its syntax. Whether we extend the use of the word “syntax” to cover these cases is a merely verbal issue about how we choose to use the word, I think.

Syntax and Semantics

While I've read a bit about semantics and syntax, a glance at formal texts is pretty, well, formidable. I could use a crash course in syntax, haha, that gives the idea without getting too into the weeds or immediately jumping to stochastic modeling or complex algebraic descriptions. Can you recommend anything? —Andrew

We will read a bit more about these topics later in the semester, but I have decided not to try to teach the technical details, because that takes a lot of time and most people here don't have the same background.

A good place to start reading about formal semantics is *Meaning: A Slim Guide* by Paul Elbourne. An extremely approachable thing to read about syntax is *Grammar as Science* by Richard Larson. I can send you a PDF of Larson's book if you ask me for it.

You mention that no other animals 'systematically endow complex expressions with meanings'. While I don't object that this is true, it's a big step, or so it seems to me. Where the meaning "is" in the process of creating a sentence is...strange. I guess I was confused by the idea of meanings being modeled as functions 'in the most influential theories'. Not so much by the idea of functions, but by the functions providing mere "informational content". Later in the chapter you discuss the myriad ways in which the same sentence can be interpreted, and this combined with the fact that we often grasp the "sense" of someones statement even before it is finished, seems to conflict with a, let's say, 1-to-1 functional relationship. It's probably more complicated than 1-to-1, so this is a long way of saying: I'd like to know more. —Andrew

I agree that all of this is quite confusing, and it's not totally clear how to think about it. My preferred way to think about it is that we think in a certain medium—sort of like the machine code on which a computer runs. And syntax and semantics are the study of how we translate from a public language like English into our own private machine code. But of course, this pushes back the problem, since it raises the question of what it is for a "sentence" of a person's "machine code" to have a certain informational content. And that is a big question in the philosophy of mind that normally goes under the heading of "the problem of intentionality" or something like that.

On Scott-Phillips' Communication Game

I wonder are all information channels genuinely blocked in the Scott-Phillips computer game? If they were to make an association between the C and the color yellow wouldn't it require that some movement be used to display that association? As in, it would require that they move around in a certain way that depicts the link between C and the color yellow, and it seems that movement too could be seen as a conventional channel of information exchange. If you observe me expressionless moving towards an object and then move towards another other object, if you are looking for a pattern of course, it would be possible for you to infer that I am making an association between the two objects. The same is true in the virtual world, only that it is not directly me, one would be observing. Maybe I'm just missing something, looking forward to the answer! —Anna McClure

This is a very good question, Anna, and I don't know the answer. I would be surprised if there were conventions of the kind that you describe that were already in place before the experiment began. But if you could somehow demonstrate that such conventions exist outside the game, this would seriously damage Scott-Phillips' findings I think.

Our use of novel signals

Does 'fastmapping' really weaken in adulthood? Perhaps there is just not enough stimuli for it to work - learning a new language, for instance, is much easier if you move to the country of origin and choose to communicate only with that language. Children are in precisely such an environment when their fastmapping is at its peak. —Shah

I think you're right that part of what happens is that teenagers stop encountering lots of new words to learn because they have already learned most of the words that are commonly used in their environments. However, it's also well documented that adults find it more difficult to learn new words than children, and so there are good reasons to think that at least part of what is going on is that the part of our minds that we use to learn words is working at full-strength between, say, three and six, and then its performance slowly drops off, without ever fully going away. This sort of thing is a common feature of human brain development, and it fits with other ways in which language has a "critical period"—i.e. a period ending around puberty during which we are particularly good at learning language. We'll learn more about this in a few weeks, when we study generative grammar.

In section 4, the examples in the first paragraphs seem to be mostly expressions of aggression adapted to different surroundings rather than actually novel signaling. Car honking is just using an aggressive sound in a more technologically advanced way. If we replaced the honk with a more pleasant sound, it might have different connotations. It seems most of the signals are just primitive signals readapted in different/modern ways. Can animals also readapt their signaling, if we changed their environment? —Shah

You're right that many of my examples involve expressions of anger. Perhaps I was in an annoyed mood when I came up with them! But I think that doesn't do those signals full justice, either. In order to understand a car honk, you need to know more than that the driver is annoyed, you need to know what they are annoyed *about*. Likewise, when Don Corleone puts the severed head in the movie producer's bed, the movie producer has to infer a lot of things in order to understand the signal: who sent it, that it communicated displeasure, and what it communicated displeasure about. In that case, it had a pretty complex message!

Some animals can adapt their signals in some ways to new environments. I discuss the example of honeybees in the chapter, where they can adjust how they dance to their latitude. But this is a fairly limited kind of adaptation, because it's not as if they can change what they're talking about. If you move them to an environment in which there are lots of forest fires, they can't start warning each other about the locations of fires by dancing backwards or something. In general, most animal communication systems are much rigidly controlled by the animals' genetics than ours seems to be. (This is not to say that human language and communication has no genetic basis. Just that it's

much more flexible in its uses.) So, most nonhuman communication systems would have to adapt to new environments over evolutionary time rather than within the space of a generation or two.

When explaining the computer-game experiment in number 4 you tell us 'the spontaneous emergence of new signaling conventions is often explained by appeal to their /salience/' and then state that this phenomenon demands explanation. I want to understand if you are claiming to have given the explanation or are just stating that a further explanation is needed. In the way I read 4, you are pointing to the phenomenon (which is quite fascinating to notice) but not going further on how and why. —Loreta

That's exactly right, Loreta. Salience is a name for the phenomenon, not an explanation of it. My plan is to do some of the explaining in later chapters. The basic idea, though, is that for humans something is usually salient in part because we are able to infer that it will be notable to others as well as ourselves. Humans have an advanced ability to recognize what other humans are thinking about, and to predict what they are likely to think about given a certain stimulus. This ability—sometimes called “theory of mind” or “mindreading”—is a big part of what makes the things that I discuss in this chapter possible.

It also sounds to me like the ability to use novel signals is in a way an ability to invent a temporary shared micro-language to serve the current needs of two or more speakers across different settings, as long as they have the willingness to cooperate. —Loreta

I think this is right, though of course sometimes elements of the microlanguages catch on and stick around for the long term. We're going to talk about microlanguages a bit in a future week, when we'll read some of Peter Ludlow's book, *Living Words*.

How did human communication evolve?

..It is interesting and slightly confusing to me that animals have been alive longer than humans and yet we are the only species to have formed such a complex way of communicating. Initially, I thought that it was simply because we have brains that are able to store and process a significantly larger quantity of information than any other animals. This makes sense but I wonder if this were always the case. For language to have evolved it must have started from somewhere. So i'm curious to know if human beings began forming language because it was necessary for survival? No human being could fight off a gorilla or a cheetah with their bare hands, for example. So, did humans initially not have the same capacity for language that we do now but it was necessary for our brains (and with that, our language) to evolve over time so that we could survive in a world where we would be helpless against so many different animals/predators? Or did we always have this capability of language and it only expanded as necessary with advancements in all other areas of life? —Yakira

Something that I was thinking about throughout was that we accept as a premise that humans have the most complex system of communication, which is the reason why but also the result of us being at the top of the food chain. This made me wonder about the epistemology of how we

came to this. The chapter points out some innate abilities which may have resulted in this, such as the structure of our brains and vocal chords to physically allow us to make a variety of sounds and connect with others. However, this also made me think about cavemen, and primitive people who communicated with far less words. —Darya

The question of how human language and communication evolved is a very interesting one, and it is the subject of many fierce debates among linguists, cognitive scientists, and anthropologists. As Yakira suggests, most theorists assume that language evolved slowly, step-by-step, in part as a result of the greater social complexity of human life. Of course, exactly what the steps were is pretty difficult to figure out. This is because our nearest ancestors, the other great apes, seem to have almost nothing that resembles human language, and so all of the intermediate steps have been lost with the extinction of our more recent pre-human ancestors. We can dig up their skulls, but there's no great way of figuring out how they talked. Still, there is a lot of cool work being done on this topic. One of my favorite books is *The Evolution of Language*, by Tecumseh Fitch.

How is human communication continuing to evolve?

I'm curious if you believe forms of communication like emoji, and other digital media are somewhat concretized and will also evolve as does the rest of our communications. My belief is that it will change even more rapidly than other communicators, as it is digital, and the digital world has more of a propensity to evolve exponentially. Perhaps emoji will be phased out in favor of other similar forms like that of bitmoji, which relies on the participant to create an avatar (similar to that person in reality or not). Another thought of mine is that both of those will be overtaken by a form of communication not incredibly dissimilar to holograms, but there's no particular way I can imagine society will favor. I didn't intend on writing so much on the outlasting impact of emoji, I rarely use them! I mainly wanted to make a point about communicators through history, such as cave drawings, stone carvings, hieroglyphics, lithographs, books, phonographs, and so on. I'm curious if you have found anything impacting on the history of human communicators, and how often they're updated and replaced, regarding the philosophy of language more than, say, anthropology. —Jacob

All of the conventions that we exploit in order to communicate with each other are constantly changing from one generation to the next (or, in the case of emoji and many kinds of slang, even faster). This is true of language too. That's why it's so hard to read Beowulf in the original. Languages sort of drift over time. It would be very surprising if this process doesn't continue.

Furthermore, as our technologies advanced, a section of the chapter described our use of emojis, symbols, charts, diagrams, etc. that we tend to universally understand. This is also attributed to being an element which separates our language and makes it more complex. Obviously other species do not communicate with emojis and such, but I question the importance of such. It seems that the only reason we have such an advanced method of technological communication is because we can or want to. Most animals as mentioned communicate with specific purposes, such as finding food or alerting of predators, but we humans choose to communicate for entertainment, etc. I wonder how this other section of communication might impact our

superiority, and why other species have not been able to develop to it on some level. —Darya Babaytseva

There is a lot of debate about how much of language change is because our language is adapting to new social realities, and how much is random drift. I think it's a bit of both, but people tend to overemphasize the importance of adaptation and underemphasize the importance of random drift. For example, there is some pretty good evidence for what's sometimes called "the child innovator hypothesis", which says that a lot of inter-generational language change happens because children never fully learn the language of their parents. They make predictable patterns of mistakes and then those "mistakes" turn into the correct way for the next generation to talk. Sometimes this is because they're being creative or inventing new ways to say things that are useful to them but not to their parents, but sometimes it's clearly just a bunch of accidents that slowly accrete over time.

We'll read about this a bit later in the semester when we read part of John McWhorter's *The Language Hoax*.

Do all humans have all of these capacities?

Overall, I thought this was a good read. However, there are a few points I'd like to emphasize because I think they are important to consider when forming the argument that the complexity of the human language is unmatched. The first thing I think is important to consider is that not every human holds the capacities that make our language unique or unlike our primates or other non-human species. Although I do agree that syntax and semantics make our language unique and the level of its complexity in a general sense seems unmatched given what we know and what we have presumed to know about the language of non-humans. However, it is important to keep in mind that not every human holds these abilities and therefore language cannot be used to discretely distinguish the uniqueness of humans and non-humans. If that were the case, we might as well just say that the humans who have these capacities are more special or unique than the humans and non-humans who do not. —Zaida

Right, it's true that for every one of the capacities that I mention, we could find a human who lacks it. Similarly, for every body part that humans normally have, we could find a human who lacks that part. There are humans who lack one of the usual brain hemispheres, and humans who lack the capacity to digest food, etc. For that matter, we could find songbirds who lack the ability to sing, etc.

Still, that doesn't diminish the fact that the things that I list in the chapter are normal human capacities, which are displayed by the vast, vast majority of humans on a daily basis, and which we would need to explain by studying typical features of human psychology. Likewise, singing is a normal capacity of some species of birds, even if there are some members of those species who can't do it.

I agree that there is always a risk of marginalizing some individuals by talking about what "normal humans" are capable of. This is because the word "normal" has both statistical and normative components to its meaning. It doesn't simply mean "most" or "best", but tends to mix those two together. But I don't think this should prevent us from studying humans as such. Just as we need to know how human kidneys work (even if there are some humans without kidneys), it makes sense to

study how human communication works (even if some humans lack some common communicative capacities). I don't think either pursuit should be understood as an insult to the kidneyless or those who lack certain communicative abilities.

To what extent can other great apes be taught human language?

The chapter highlights many features, some of which I am aware of, and help readers understand the vast divide between human and nonhuman communication. The topic in question, I'd like to raise, relates to the ability for non-human animals to accelerate to Homo sapien's standards of expression. The Smithsonian's Magazine article, "[What Can Bonobos Teach Us About the Nature of Language?](#)", [[←LINK](#)] dive deep into the struggle Sue Savage-Rumbaugh and Kanzi face trying to improve the possibility of communication expansion. Chapter three makes an aloof reference to Sue Savage-Rumbaugh and her study with bonobo apes. The extent in which your first chapter differentiates human and non-human communication, alludes to a motionless split. (Without having read the rest of the book.) After reading the intensity of advancement Savage-Rumbaugh made, it's hard to believe that without research and work, non-human animals like bonobos cannot reach the level of evolution humans have, in communication. With that being said, I have done no research or study on bonobo apes and their abilities to communicate versus human's abilities and cannot make any concrete accusations without vast analysis in science. —Gabriella Azzolini

There is enormous controversy over the degree to which apes, such as bonobos and gorillas, can be taught something like human sign language. The proponents of this idea, such as Savage-Rumbaugh, have claimed that the apes with whom they work have large vocabularies (in some cases hundreds or thousands of words), and that they can do some basic syntax and semantics, putting two or more words together in a systematically meaningful way. So they will say things like "apes are capable of about as much human language as two-year-old humans".

Their opponents tend to argue that these claims can't be trusted, that since Savage-Rumbaugh and others like her are basically close friends with the animals they study, they are extremely biased, and are reading far too much into apes' relatively random patterns of gesture. The extreme deflationary interpretation is that great-ape sign-language researchers are basically using their subjects as ouija boards, projecting meaningful signaling onto the animals that isn't there. I think that this interpretation is at least a bit too extreme, but I do think it's quite worrying that the only people who are in a position to have conversations with the apes in question are people who have devoted their whole lives to trying to prove that apes can talk, and who have close relationships to them. One worries that it is a bit like when someone tells you that their child is a genius.

In order to settle this debate, what we need is some way of independently assessing the researcher's claims. Luckily some of this work has been done. For example, [this study](#) by Esteban Rivas attempts to assess the work on chimpanzees, by independently assessing and statistically analyzing video taken by chimpanzee sign-language researchers ([here](#)) is some similar work by Charles Yang). Here is the abstract from Rivas's paper:

In light of the controversy about the linguistic properties of chimpanzee signing behavior, the recent sign use of 5 chimpanzees (*Pan troglodytes*) with long histories of sign use was analyzed while they interacted with

longtime human companions. Four corpora from 1992 to 1999 consisting of 3,448 sign utterances were examined. The chimpanzees predominantly used object and action signs. There was no evidence for semantic or syntactic structure in combinations of signs. Longer combinations showed repetition and stringing of object and action signs. The chimpanzees mostly signed with an acquisitive motivation. Requests for objects and actions were the predominant communicative intentions of the sign utterances, though naming and answering also occurred. This recent sign use shows multiple differences with (early) human language.

So I think the appropriate attitude about this research, at the moment, is cautious skepticism.

Semantic underspecification

I want to know about “semantic underspecification” or “semantic underdetermination” (19). I am not familiar with these terms. I suppose that they are the terms of linguistics. —Misa

I believe the terms originate in a book written by a linguist and an anthropologist, but philosophers of language use both terms all the time. It's a useful concept, and it's important to recognize that the words we use very rarely fully specify what we're trying to communicate with them. This will be something that we come back to when we read Grice and Scott-Phillips in a few weeks.

I'm curious to what degree does semantic content need to be inferred from outside of the actual message to count as semantic underspecification? Since it is difficult to determine how we should translate something like the alarm call of a prairie dog as the author uses in an example, it could be interpreted as "take cover" or "there is danger nearby." In the case of "take cover" or an interpretation along the lines of "burrow quickly," would something like that count as semantic underspecification? If we interpreted their alarm call as such, then semantic content would require inferences such as, a predator that cannot reach us while burrowed is near. If you assume the message is "take cover", then presumably it would require recipients of the signal to infer that the message is only for those that aren't already burrowed at the time of reception. In a separate passage of the reading it mentions controversial debate on whether or not, "affiliative and aggressive signals of nonhuman primates should be understood by analogy promises and threats, respectively" and it seems like gauging the level of underspecification in communicative signals across different species would require these sorts of questions to be resolved before we could make accurate statements on how much semantic content is being inferred. —James

In practice, the rule seems to be that if we can come up with a message content that is constant across all uses of a signal and that would result in the various behaviors that we observe, then we conclude that the signal is not semantically underspecified. So, for example, Vervet Monkeys have a signal that seems to mean “there's an eagle coming” or perhaps more generally “there's a threat from above!” Either of these could count as the informational content of the message. Of course, what a recipient does with this information might depend on their situation. If they're in a safe place, they might just stay there, for example.

This sort of thing is always present in human communication too. If I tell you that $65 + 23 = 88$, you might get a new piece of information. What you do with this information will depend on your other

goals and beliefs. But that's not semantic underdetermination on its own. (Plausibly, this is one of the few examples of human communication that doesn't display much, if any, underdetermination.)

Compare that to "he's coming". Here it's not just that you might do different things upon learning the informational content of my message. It's also that you can't even figure out what the content is until you figure out who I'm talking about. Who is coming? The fact that I used the word "he" tells you that I am talking about a male, but you need to figure out which one before you comprehend my message.

I think we might be able to say that all words are kind of pronouns that 'stand-in' for each context or what we recognize by some differences we perceive. => If you could give me some advice to look into them more, it would be appreciated. —Chateldon

Most semanticists would probably say that "pronoun" is too specific of a category to be expanded in the way that you're suggesting. But if your point is really that nearly all words are context sensitive to some degree, then you will find people to agree with you. Later in the semester, we'll read part of Peter Ludlow's book, *Living Words*, where he makes the case for something like this idea.

"Honeybees" communicate with each other by their waggle dancing. Lindauer says that "Bees who are detained in their hive for several hours after witnessing a dance will compensate for the sun's intervening movement when setting off to follow the earlier instructions" (20). This is unbelievable. Human beings do not have this ability. I think that animals have their secret abilities to inform or receive some meanings with signals. We may not have known their abilities. Human beings also have the same situations as velvet monkeys or baboons. We may ignore the alarm of noisy friends. We pay attention to the mother when her child does something. —Misa

Humans can figure out how to compensate for the sun's position if we need to, but it certainly doesn't come naturally to us! This is definitely another example of a way in which nonhuman communicators can do some things that we can't do—at least not easily.

Communicative Acts

A question I have that I'm confused about is if declarative clauses are associated with assertions. Can asking questions also be part of declarative clauses given that in a subject verb order it is occasionally used in asking a question? Therefore, these declarative questions recollect some of the declarative force of a statement as if the speaker is testing out the truth of the statement or by inviting confirmation. Just to clarify and see if I understand how declarative clauses are used in human's communication it means that these help us state information on what we are doing or what we are going to do for example, I can say I am taking a philosophy course on aesthetics because it has to do with my major which is philosophy therefore, this is a declarative clause.

—Dayana Castillo

You're right that it is an oversimplification to say that declaratives are normally used for assertions. For example, when a declarative is used with a certain kind of rising intonation, it is usually used to ask a polar question. Although there is no standard way of transcribing intonation in writing (other than the ones used by specialists), we often indicate this in writing by putting a question mark at the end of a declarative: "Assertions are only used for questions?"

The same goes for imperatives. If you say "take a seat" with falling intonation, it might sound like you're giving an order. With rising intonation, it will sound like a polite invitation.

Music and communication

I was a little surprised that music never made an appearance. While you discuss bird songs, it's interesting and maybe important that humans have yet another complex communicative behavior. The way I figure it, music behaves like language in many ways, with syntactic structure and communicative intent, but without semantic content (controversial). While there aren't "root words" in music, each musical common practice has a loose set of "cells" or "figures" that can be drawn on to construct contextually meaningful phrases. Like a bird song, these cells have no content on their own (or do they????) but when strung together communicate something. Final paper topic? —Andrew

I agree that music can be understood as having something like syntax. There are some linguists and neuroscientists who study this exact parallel. David Poeppel, at NYU, is one example. I also agree that it's less natural to say that music has semantic content. But I would also say that it's questionable whether music is normally endowed with communicative intent either. What is the communicative intent behind Phillip Glass's fifth string quartet (or behind any one passage in it, for that matter)? I think it's pretty hard to say. (Of course, some linguistic communication has this unparaphrasability too, as we'll see when we study metaphor, so perhaps this argument of mine isn't knock down.)

You could definitely write a paper on this topic if you would like. I would have to do a bit of research in order to help you figure out where to look for things.

Philosophy vs. Linguistics

Before taking the class that I am wondering what is the difference between linguistic and philosophy of language, for me that linguistics is concerned with questions such as grammar, pronunciation, intonation, dialect, history of a language, change, etc. But in his word that I observe that language here is focused such as the relationship between language and objects, the role of language in human communication. —Yongqi Kuang

There is no sharp boundary between the philosophy of language and linguistics. I regularly read things by linguists, and I go to many of the same conferences as linguists, and I hope they read what I write too. Insofar as there is a division of labor between the two groups, it works roughly like this: linguists tend to be more likely to study many different languages, and to do fieldwork in order to test how their hypotheses apply to languages very unlike their own. They also tend to be more

focused on developing detailed mathematical models of the languages that they study. Philosophers tend to be more interested in big-picture questions about the nature of language, and in the implications of their investigations for traditional philosophical topics like ethics, epistemology, and metaphysics. But there are many exceptions to these generalizations.

Communication without shared meaning?

On page 18 that he mentioned the metaphorical use of emoji, here is my little confusing come, how if people have different definitions to given out for the same emoji? I mean totally because that religion, ethnically, or another factor. However, even if there is no bilateral or multi-party verification of the objects mastered, communicators can communicate with each other at different levels and in different styles. Why? —Yongqi Kuang

In week 11, we'll read some of Peter Ludlow's book, *Living Words*. He argues that humans are constantly having to deal with variation in the meanings that they attach to words. A big part of what we're doing in conversations is to negotiate over the meanings of the words that we're using, so that we can make sure that we and our interlocutors are using them in consistent ways.

Language and Thought

Sometimes, people's thoughts are said to be driven by languages/words, and it may happen while we use languages, but that is not always. Of course, we sometimes or often know some concepts or entities by knowing new words. But unfortunately, we have unverballed more abstract ideas or sensations (<- not sure what word is appropriate...); I won't say emotions here because emotions are relevant to reasoning. But is that just because my vocabulary is too poor? Also, might that somehow pertain to one of what "current AI" can and cannot do? —Chateldon

The question of how the language we speak shapes how we think is a significant matter of controversy. It will be our last topic in the course, in week 15. So I think I will hold off on giving you a detailed answer to this question until then...