[MUSIC PLAYING]

KAREN FOLEY: Welcome back to the *Student Hub Live.* Well, haven't we had an amazing afternoon? We have talked about gender. We've talked about children's digital lives. And we've talked about creative uses of media, and John Oates' ethnographic research.

So now we're going to talk about language with Paul Ibbotson And we're going to focus on why children make more mistakes as their language ability increases. This just demonstrates, Paul, the variety of the programme, Q23, that students can engage with and the extent to which things are interdisciplinary. There are so many different perspectives, so many different methods going on. And we've created a wonderful flavour.

And language, I think, is one of these things that is so complex, because obviously, we sort of notice children's linguistic ability increasing. There are all sort of things that happen concurrently, like cognitive development, et cetera. So it's a really difficult area to start investigating.

PAUL IBBOTSON: Mm-- it's difficult for many different reasons actually. It's difficult in the sense that we have evolved 7,000 different ways to say "hello," if you like. So there's these multiple cultural forms on top of the basic cognitive equipment, if you like, that it takes to learn language. And as you say, it's child language. So we get children into the lab. And bringing a six-month-old into a laboratory test environment creates its own challenges as well.

It's complicated, as you say, for another reason, that it interacts with lots of other different areas of psychology, such as memory, categorisation, analogy. So it's actually a good prism through which to study a lot of different areas of psychology, perhaps no more so than the social abilities of children to read each other's communicative intentions.

KAREN FOLEY: One thing I'm really mindful of was Steve Harrison gave us an introduction to the qualification and some of the issues. And we were talking earlier about how it will be many students with many diverse perspectives coming onto this qualification pathway. Some will be very interested in developmental psychology. Others will be very interested in the practical applications. And yet, we can learn a lot from each other.

Now language, I mean, there are some big theories around in terms of how we develop the

use of language. There are also lots of different cases of evidence and examples that we can use to maybe support some of those claims, and new ideas emerging. Can you tell us what some of the big things are right now? I mean Chomsky was one of the key people, who students are going to no doubt read about.

PAUL IBBOTSON: Right, so there's kind of two big questions that I'm interested in and that to some extent are related to one another. And that is sort of why are we the ones talking here today?

KAREN FOLEY: No one else would come for it. It's just you and me. [LAUGHS]

PAUL IBBOTSON: Why is it that, when I say we, why are humans the ones that have ended up talking. It's a miraculous thing, if you stop and think about it, that some digital representation of information can be transferred in this analogue way across speech. And then it can reform in your head in a digital kind of way. And we share some understanding, hopefully, of what those representations mean. And I can direct your attention to various things using this cultural form that we've grown up learning together.

If you stand back and think about it, it stands out in the natural world as a really weird thing to do.

KAREN FOLEY: And often we think it's one of those things that makes us human. It's one of those distinguishing features.

PAUL IBBOTSON: Right, it's very close to what most people think. It's at the heart of being human. So it's natural, I think, for those who are interested in human nature to speculate on what makes the difference. And I think every theory of language acquisition needs to have an answer to that question of what makes the difference.

Put a chimpanzee in a human culture-- a chimpanzee is the closest evolutionary relative to ourselves, share 98 point whatever percent of our DNA. They won't grow up displaying anything like the same linguistic abilities that we will. So everyone needs a theory of what that difference is.

And as you say, Chomsky came to a very famous conclusion on what that difference is with his idea of universal grammar. So he said, regardless of the kind of 7,000 or infinite number of human languages we could possibly learn, underneath, underpinning all of that is a universal set of grammatical representations. That sounds quite abstract, but it's basically written in our DNA.

And this idea came about in the late '50s, early '60s, when there was a kind of computational approach to everything that was taking off. But it was also clear at that time how much of our human nature could be attributable to our genetic inheritance as well. So that idea sprang out of that. And it was a really bold proposal at the time that it came out.

I think it was kind of neat that so much variation in the natural world could be potentially explained by such a small set of parameters that could be triggered by the input that a child receives. So a Japanese-speaking child would have their universal grammar arranged in a particular way, because they had received Japanese input. And that allowed them to "grow," in Chomsky's words, their language.

That kind of language of growing is intentional, that he thinks language is as much a part of our biology as growing or developing vision, for example. And the problem with the idea is that just the sheer diversity of languages has defeated the idea, in my opinion, over the 50 and 60 years that the idea has been tested. So 50 or 60 years later, you can't find two linguists who agree on what is in universal grammar in a way that would allow a child to be at some advantage of learning language. And I think that's telling.

So it's just the diversity of linguistic forms across the world has really defeated the idea of what universal grammar could be. So in reaction to the perceived failures of universal grammar, a competing theory arose called usage-based approaches to language acquisition, or cognitive grammar, construction grammar. They all emphasise, basically, that language is a product of recruiting what we call domain-general capabilities, so things that I've spoken about, like analogy, and memory, and reading communicative intentions, rather than a language-specific device or a piece of the brain that has specifically evolved to acquire language.

In many ways, it's a messier theory, because there isn't this kind of neat universal grammar that explains a lot. Knowledge is that language is complex. And it's adaptive. And it's an emergent system. And it's complex. And it's powerful. And there's a lot of work still to be done to understand how all these bits of the system interact in a way that will allow us to predict how children learn language.

KAREN FOLEY: Well, it's a very complex issue, because you talk about so many various different factors here. One of them is you're talking about a model. And obviously, having a model that can be universally applied is really complex. I mean, the whole idea that something could be

applicable to so many different languages, within so many cultures, over so many times, I mean, we're in a chat just sort of trying to say hello to each other, and that's pretty much where, "hello, everyone."

Actually, let's see. HJ, what are some of the most innovative ways of just that one word that have been coming through?

HJ: We have a fair few different ways here. I think Claudia pointed out that there's about 500 ways that we could do this. Sam says, "ayup" where he's from. We've got, "how at," "'sup," "all right." We've got the quick head nod, so, as you're walking past and, I think, if it's door seller, just close the door- no hellos there.

And Stuart's also got, "very pleased to make thine acquaintance." so very formal there, so it probably depends on the situation as well. But, yes, we've got "bonjour" as well, and--

CLAUDIA: Yeah, shake hands, "what ho--"

[LAUGHTER]

KAREN FOLEY: So there are different things coming up here. A lot of them are words, but some of them aren't words. And then there's this whole idea, I guess, of the extent to which language can be separated from other forms of communication. I mean, we were talking, not in explicit terms, but about metacognition, about us being able to create something in each other's brains. And language is one of the key driving factors.

But I guess that thing that makes us distinct is that we've got the language as opposed to chimpanzees, who may have some of the nonverbal communication. So really, we're talking about verbal communication here in terms of language and the idea that this is somehow related to cognitive abilities in terms of what we think. There is this relationship between the two aspects that is difficult to separate.

PAUL IBBOTSON: On the E219, we talk about communication and the development of communication in general. And that's intentional that we don't just focus on language. So we talk about pointing and gestures. So a point is another way to share attention in the same way that language is. So that's communication in a broader sense.

It's probably just worth saying, kind of what the problem is with language acquisition. Because I've often said what I study, and people kind of look puzzled and vague. They're like, well don't

kids just learn language from the language they hear around them? So a large extent, that is true. But if that was all that they were doing, if all that they were doing was parroting back what they heard, they wouldn't make mistakes, such as "I goed to the shops," or "sheeps," or "feets."

And these little speech errors, so-called, are really quite informative to the developmental psychologist studying this, because they give as a little window into how productive language can be. So it can't be the case that kids are just parroting back, because adults don't say those kind of things to them. What they've done, when they say "I goed to the shops," for example, is that they've over-regularized a past tense form in English. So it's a form of past tense in English. We usually add an e-d-- I walk, walked.

So to a large extent, language is learning patterns, but learning exceptions to those patterns as well. But so children are constructing their own rules from the kinds of patterns they hear around them. A lot of the work of developmental linguists is trying to work out the constraints on how they get from "I goed to the shops" to a fully formed kind of adult grammar.

KAREN FOLEY: You mentioned earlier how, at the time, there's a sort of idea about computational modelling has really influenced Chomsky's idea as well as the way that other people are viewing things. So this usage-base thing, this idea that we're sort of learning these terms and being able to represent them in our heads and being able to apply them, then has complications when you're looking at these irregularities. And so there must be some sort of competing ideas. I mean Chomsky was very, very dominant and still is.

But what are some of the other ideas that are coming into play in terms of some of these irregularities? What are they telling us about language acquisition and about arguably these rule-based things, which maybe are just happening in a slightly different way to the way that Chomsky had intended?

PAUL IBBOTSON: Yeah, well to be fair to Chomsky, he didn't have, at the time, what we have now in terms of our understanding of how powerful children are at learning statistical patterns, not just in language but in categorisation in general, in sounds and patterns. So they're phenomenal pattern-finders, if you like. Well, we are, as a species. So he didn't have that available. He also didn't have available the large online corpora of child speech and child-directed speech that we have, that we can mine for data.

So he, some disparagingly might say, quite armchair linguistics in that he came to his

grammatical judgments by consulting his intuition about what is possible in English. And that's another point actually. His analysis was largely restricted to English. So- we have a-

KAREN FOLEY: Which is important when you've got character-based languages as well.

PAUL IBBOTSON: Yeah, and everything, every way of communicating you could possibly think of, it seems there's a language out there that's evolved to fulfil that particular communicative niche. So Chomsky formulated his ideas in this time, really. But we have now a lot of evidence from tens of years of developmental psychology studies about how powerful children are at learning these patterns, but also it comes back to this question about what makes the difference.

So learning patterns just isn't enough. Computers are good at that. Computers aren't speaking. It's something about the unique ability to read communicative intention. So if I say, "Can you pass that glass of water to me?" You intuitively read that, not as a inquiry into your water-passing abilities, but as a request that I should receive the water. And that comes so natural to us. But try programming a computer to read communicative intentions, or intentions in general. It's extremely difficult.

And the whole linguistic system is so complicated. An example of this is that when you phone the banker up, and they have these automated speech recognition systems. After 20 years of speech perception research, if you've got a cold or slightly mispronounce, the system's dead. Whereas a human, because they can read communicative intentions, they can recover a message from a noisy signal. And so despite all this research into artificial intelligence, we're really just starting to get off the ground in terms of being able to design a system that can understand another human.

KAREN FOLEY: So people in the chat are talking about how kids follow rules. And one thing that is apparent is that whether or not you're trying to develop a model, this is very much a rule-based system. Why why does that matter? I mean, clearly there are so many issues with trying to get one sort of rule-based system that fits things universally. Where is it all going now in terms of research? I mean, is there a consensus that, to some extent, there are certain things that might be different?

For example, you mentioned English, or the sort of language, or the way of communicating. Are there some areas that this is going to develop in? Because it seems that there are sort of these two very different ideas about how things are operating in terms of how we're acquiring language. And obviously picking up on errors is important, but also trying to get something that

can apply to various different categories is also important. So where is it all at?

PAUL IBBOTSON: The field in general, I would say that universal grammar dominance of Chomsky is being overturned, if not has already been overturned. However, what the leading contender is to replace that is not entirely clear in that there are many, many issues still to be resolved. It's clear what the shortcomings of his original proposal is. It's not clear that we've solved all the other issues with a leading replacement to that theory.

One thing that would be hugely beneficial is some details mechanistic account of how humans read intent, communicative intentions, and how that can interact with how a child constructs their grammar. That is Chomsky's key point, that without constraining a possible grammar, then you're never going to get to adult competence. If we could show how human social abilities interact with the grammar, then that I think would go a long way to answering the critics.

KAREN FOLEY: Absolutely, because I mean, it is that meaning that is so important. I mean, Stella has said children now are using words like wicked and sick to mean the complete opposite- well not even the complete opposite, something completely different. So how might we deal--

PAUL IBBOTSON: -so that usage base of use has- what a word means is the sum total of how it's used. So that means that language is inherently dynamic and flexible. And people-- to use a word effectively, there must be some shared understanding of what it means. But it doesn't need to be and identical--

KAREN FOLEY: So it can be, within different categories of people or different groups, they can evolve their own language.

PAUL IBBOTSON: Yeah, yeah, I mean, there are some that often bemoan the state of current English. But then you could say to those people, so they have to be angry that "goodbye" is a corruption of "God be with ye" as well. So if you're angry about change on one thing, you've got to be angry about change in general.

KAREN FOLEY: Yeah, no, absolutely. A very, very complex field, Paul. I just want to take a quick trip to the Hot Desk, because we're nearly out of time for today's programme. I know you've been talking a lot more, more, more as to how is everything over there.

HJ: We had a discussion about how kids follow rules so logically, didn't we?

CLAUDIA: Yes, and as this is when they're learning, I think is when we realise that they're trying to apply the logical rules to how their language should be worked. But language doesn't work that way. And Summer also has mentioned that her niece has cerebral palsy. When she was younger, she would call ponytails tonypale. And she'd like to know how that actually worked out in her brain. Because she knows what she's trying to say, but she just can't get it out properly.

PAUL IBBOTSON: What's really interesting is that syllable substitution almost always results in a plausible English word. So there are an infinite number of ways in which that alternation could have happened. But they often substitute in a way that still obeys the phonotactic rules of English.

KAREN FOLEY: --and corn flakes for forn flakes. You know, it's interesting because we sort of intuitively just correct children. We don't say more as. We'll just correct them as we're going along. But sometimes I'm mindful that some things look really cute. And so we might sort of say, oh it's OK to say those words, and then eventually decide that it's not OK. And we'll--

PAUL IBBOTSON: Well, the research actually points to the vast, vast majority of times we don't correct children. And that's thought of as something of a problem, because how do children ever learn that what they're saying is wrong if they never receive what's so-called positive-- or a negative feedback, I should say. So, yeah, that's an issue to resolve in a theory.

What parents are more likely to comment on the truthfulness of the comment rather than the grammatical, well-formedness of the sentence. In fact, a lot of the time parents repeat the error because it sounds cute.

KAREN FOLEY: Yeah, no, exactly.

PAUL IBBOTSON: So they get reinforced in some sense.

KAREN FOLEY: OK, well that's another thing on my to-do list, Paul, in addition to putting my phone down at the table. Paul Ibbotson, thank you very much for a really interesting session. And that's all we've got time for today. But we've had a really, really great afternoon. And for those of you who have missed it, you can go back and watch on the catch-up, where Steve Harrison gave us an introduction to the qualification, which is Childhood and Youth Studies.

Naomi Holford and I had a really exciting talk about gender. And then Mimi and I talked about children's digital lives. Then John talked about creative media and his work as well. So those are all available on the catch-up, as is some of the other stuff we've run in terms of boot

camps, getting set up to study. We've done reading, and note-taking, and time management this morning. So you can check all of that out.

And we have a range of programmes available next week. We have our Refreshers orientation event, where we've got lots of exciting activities lined up for you next week. So if you've enjoyed today's programme, do check out what else we got in store for you on the web site. There were loads of ways we're going to support you in your study. And we've also got a brilliant essay writing workshop. And that will be happening in October in the online rooms. So I hope you can join me for that also.

I'd like to thank everybody who has been involved, and in particular HJ and Claudia, who have been feeding all of your comments in. Would you like to say goodbye to everybody?

HJ: Yes, goodbye, it's been [INTERPOSING VOICES].

KAREN FOLEY: That was literal. And thank you very much for everybody who has been participating in the chat this afternoon. You really have welcomed each other to this community. I hope you've enjoyed the show. That's all we've got time for. Bye from us for now. And we hope to see you at another event very soon.

[MUSIC PLAYING]