

'Ums' and 'ers' are a hidden code that helped complex language evolve

Filler words such as uh, mmm and huh may seem inarticulate, but without them human communication would be far less sophisticated

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By [David Robson](#)

YOU might expect it to take more than a two-letter word to sink a politician's credibility. But one did just that for Canada's prime minister, Justin Trudeau, in June 2016. With a huge wildfire burning in the province of Alberta, he had been asked about the country's capacity to cope. "Uh, certainly, I think we're, uh, all aware that, uh, uh, a prime minister, uh, showing up at Fort McMurray, when firefighters are busy trying to, uh, uh, contain a massive raging wildfire is, uh, not a particularly helpful thing," he began. Trudeau went on to use a total of 50 uhs in a statement lasting little more than a minute.

A video soon went viral, and online commentators were universally scathing. "Canada's dumbest, uh, Prime Minister" [wrote one viewer](#). Reading the unedited transcript, you may well have questioned Trudeau's intelligence yourself. Surely such hesitation is a sign of sloppy thinking and ineloquence. Weren't we taught as children to eliminate uhs from our conversation?

Yet the latest research shows that this is an unfounded prejudice. Far from being an inarticulate waste of breath, filler words like um, uh, mmm and huh are [essential for efficient communication](#), sending important signals about the words we are about to say so that two speakers can better understand each other. "They streamline our interactions, smooth the flow of the conversation and manage our social relations," says Mark Dingemans, who studies language and social interaction at Radboud University in the Netherlands. Indeed, he argues that the complexity of our language today couldn't have emerged without them. To which the obvious response may be, "huh?"

It is only recently that scientists have paid filler words any serious attention, with many linguists previously considering them to be mere errors in speech production with no useful function. "People were taught that they were just garbage," says Jean Fox Tree at the University of California, Santa Cruz. The few studies that were done mainly riffled through that supposed rubbish for clues to deception – with mixed results (see "I'm, uh, telling the truth").

The turning point came in 2002, with a [landmark paper](#) by Fox Tree and her colleague Herbert Clark at Stanford University. They analysed vast records of conversations spoken in English covering millions of words and concluded that, far from being mere accidents, filler words constitute a "collateral signal" or "metalanguage". In essence, this means that without changing the overall meaning of a sentence, they help us coordinate conversations with minimal confusion.

Take uhs and ums. The analysis revealed that these words don't merely replace pauses in a speech, they announce them. Intriguingly, the pauses following ums were about twice as long as those after uhs. This suggests that each filler word signals something specific to the listener, rather than arising as a processing error, argued Fox Tree and Clark. These simple "inserts" are managing the listener's expectations of what will come next, priming them to either wait patiently as the speaker collects their thoughts or dive in and help out. "You're using these words to negotiate communication in real time, with a waiting addressee who wants to communicate with you right at that moment," says Fox Tree. As an illustration, she pauses mid-sentence without an uh or an um to signal the delay – and I can confirm that it is indeed very disconcerting.

Heads up

The paper has now been cited more than 1000 times, igniting more research to explore the idea that filler words are signals that guide us through a conversation. Susan Graham at the University of Calgary, Canada, for instance, has found that these words prepare us to be surprised by something new or unfamiliar. "They are a [signal that something is changing](#) in the conversation," she says.

In a series of experiments, Graham hooked her participants up to special goggles that tracked the movements of their eyes as they heard various sentences describing pairs of images presented to them. She found that participants could more easily follow the speaker's description as it veered from one image to the other if the sentences included a filler word. For example, if they had been looking at a picture of a monkey, they were quicker to switch their gaze to the turtle in the neighbouring image if the speaker said: "Look at the, uh, turtle."

"These seemingly meaningless little words can even work as memory aids"

Tellingly, Graham has also found that 2-year-olds don't appear to respond to fillers like uh or um in this way, while 3-year-olds do. This suggests that our [understanding of such signals develops](#) along with other more sophisticated verbal and cognitive skills. In addition, the response is highly dependent on context. If we are led to believe that someone is especially forgetful, their ums and uhs cease to act as signals that direct our gaze to the most salient information.

By preparing us to pay closer attention to what is being said, a deftly placed filler word can even [work as a memory aid](#), according to researchers at the University of Illinois at Urbana-Champaign. Like many linguists before them, they turned to the whimsy of Lewis Carroll for source material, asking participants to listen to summaries of *Alice's Adventures in Wonderland*. In some trials, the readers inserted a small uh before the important plot points, such as: "Meanwhile, uh, the cook keeps hurling plates and other items at the Duchess and the baby." Far from being annoying or distracting, such hesitations improved the participants' subsequent recall of these episodes by a whopping 57 per cent compared with slicker readings. That is the kind of boost you might expect with elaborate and effortful mnemonic techniques, not simply by peppering the text with a few uhs.

Of course, a slight hesitation provides listeners with increased mental processing time. To test whether this could explain the memory effect, the researchers ran additional

trials in which the uhs were replaced with a cough of the same duration. Rather than boosting recall, this reduced the participants' memory of the plot by 36 per cent, confirming that there was something special about uh that primed participants to listen more carefully. Further tests revealed that speakers [use these filler words selectively](#) to signal potential conceptual difficulties, such as a turn in the plot of a story, rather than problems with pronunciation.

The way that these seemingly meaningless little words help us memorise and process speech is quite astonishing. But fillers have an additional role with truly profound consequences for human language.

Unlike a carefully crafted screenplay, spontaneous speech is often vague and full of potential for confusion – not least because people generally come to a topic with different backgrounds and levels of knowledge. As a result, speakers have to tailor their language to each other on the fly. “We’re constantly working to revise our understanding as we go,” says Patrick Healey at Queen Mary University of London. He believes collateral signals like huh provide some essential feedback to speakers, allowing them to clarify what they mean before a mistake gets out of hand.

The power of “huh?”

Healey has demonstrated this “conversation repair” function of filler words in [an ingenious experiment](#). Pairs of participants in different rooms had to find a route through a complex online map by conversing through an online chat tool. Unbeknown to them, the researchers tweaked their messages before they reached each other. For example, if one participant asked “on the left?” for clarification, the researchers changed it to a word like “huh?” or “eh?” – which tersely indicates a more general confusion. With this simple manipulation, the participants soon started using more systematic ways of describing their location, for example with the invention of a coordinate system.

Spontaneous speech would be incredibly difficult without this kind of corrective process, says Fox Tree. “We would need to be able to plan everything perfectly in advance and enunciate it clearly, with the proper word choice and syntactic structure.” It would be much more like a rigid computer code than a flexible, freewheeling conversation.

Given these essential roles in solving basic communicative problems, how might filler words have emerged? That’s what Dingemans is trying to work out. He has found [huh in 31 mostly unrelated languages](#) – from Cha’palaa (spoken in northern Ecuador) to Lao and Russian – suggesting that it may be a universal word. This convergence reflects the intense pressure to maintain the momentum of conversation, he says. The average switch between speakers takes just 200 milliseconds, and a short sound like huh is an incredibly efficient way of unobtrusively signalling our confusion. “We need some way to quickly indicate the problem, so that we basically pass the ball back into the corner of the producer and let them fix it,” says Dingemans. “And that is exactly what huh is ... You barely need to do anything more than open your mouth and breathe out to make a sound.”

Rural children communicate with the phone. The joy of communication among children in rural Asia.

Visoot Uthairam/Getty Images

Similar pressures to guide the course of a conversation, without prolonged interruption, will have shaped many other kinds of collateral signals, says Dingemans. Mmm, for example, signals our intention to let the other speaker continue with their point. “And what better way to signify that you want to keep your mouth shut,” he says, “than a syllable in which you actually keep your mouth shut?” Far from being a sign of impotence, then, the simplicity of these sounds reflects just how [essential they are for communication](#) across the world.

We don’t know exactly when collateral signals first emerged in the history of language, but it is telling that they are unique to human speech, despite the fact that they are so easy to articulate. While other apes vocalise to each other to signal the appearance of a predator, none have the equivalent of an mmm of assent or a huh to ask for clarification. “We have no known observations of animals using this very special type of interactive repair in their communication,” says Dingemans. That is partly because of the complexity of the cognitive processing behind filler words. They rely on the speaker and listener gauging each other’s understanding and responding appropriately. This is impossible to achieve without some kind of theory of mind – the ability to appreciate another person’s thoughts – and a willingness to cooperate. These two traits are limited, at best, in other animals.

For this reason, Dingemans suggests that the evolutionary history of collateral signals is deeply [intertwined with that of language itself](#), and may go back hundreds of thousands of years. He thinks the development of some signals, like uh or huh, may even have been an important turning point in our evolutionary journey, propelling us beyond simple syntax to the sophisticated and nuanced ways of talking that we now take for granted. “To be able to produce complex sentences, we rely on the listener showing evidence of their understanding,” he says. Without that, each phrase would have to be so short and simple that there would be no room for miscommunication.

Evolving complexity

This remains a hypothesis, for now. However, Dingemans and postdoctoral researcher Marieke Woensdregt are working on computer models that simulate the evolution of different forms of communication, with and without collateral signals that can help to repair language. “We’ve just started doing this, but it really looks like if you don’t have repair, you end up with a simpler kind of language,” he says. “If you do have repair, on the other hand, then it gives you more flexibility to make your language more complex.”

Meanwhile, Dingemans’s research should offer some welcome reassurance to anyone who like, uh, Justin Trudeau has been called out for umming and uHING. Far from being a sign of stupidity, these deceptively simple words may represent the pinnacle of human cognitive and linguistic sophistication.

I’m, Uh, Telling The Truth

Umiming and uing was once thought to be a sign of deception – the sound of mental cogs turning as the brain struggles to come up with a convincing story. Truth-tellers, in contrast, would have less trouble recalling a real event, so were thought to use fewer filler words.

It is an appealing idea: a clear linguistic signature of deception would allow police and courtrooms to determine who to trust. Unfortunately, it turns out not to be true. Indeed, the latest research [suggests the exact opposite](#). Pronounced umming and uing may signal that someone is telling the truth, perhaps because they are making less of a conscious effort to present a varnished front.

Why We, Like, Say “Like”

Indred and thirty, it seems that people one thousand seven hundred and forty rely on these non-numerical one thousand seven hundred and fifty. Soon, a different hypothesis one thousand seven hundred and sixty. Perhaps, instead of having one thousand seven hundred and seventy innate sense of number, one thousand seven hundred and eighty are born with a one thousand seven hundred and ninety for quantities – such as one thousand eight hundred and density – that correlate with the one thousand eight hundred and ten of things. “It takes one thousand eight hundred and twenty and experience to develop one thousand eight hundred and thirty understand this correlation,” says one thousand eight hundred and forty.

More-refined cognitive tests in one thousand eight hundred and fifty tend to support this one thousand eight hundred and sixty. For example, children younger one thousand eight hundred and seventy about 4 years of one thousand eight hundred and eighty cannot understand that five one thousand eight hundred and ninety and five watermelons have one thousand nine hundred in common: the number 5. To one thousand nine hundred and ten, a bunch of watermelons one thousand nine hundred and twenty represents more “stuff” than one thousand nine hundred and thirty same number of oranges.