

umm, TEENLYTICAL



Summer 2021

DEAR READER,

Welcome to Teenlytical's second magazine! The content team proudly presents, "**Communication**", a magazine answering questions about the fascinating complexity of human interaction. From linguistics to physiology, we will dive into the many facets of this wonderful topic and explore them together.

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teenlyticalnews@gmail.com

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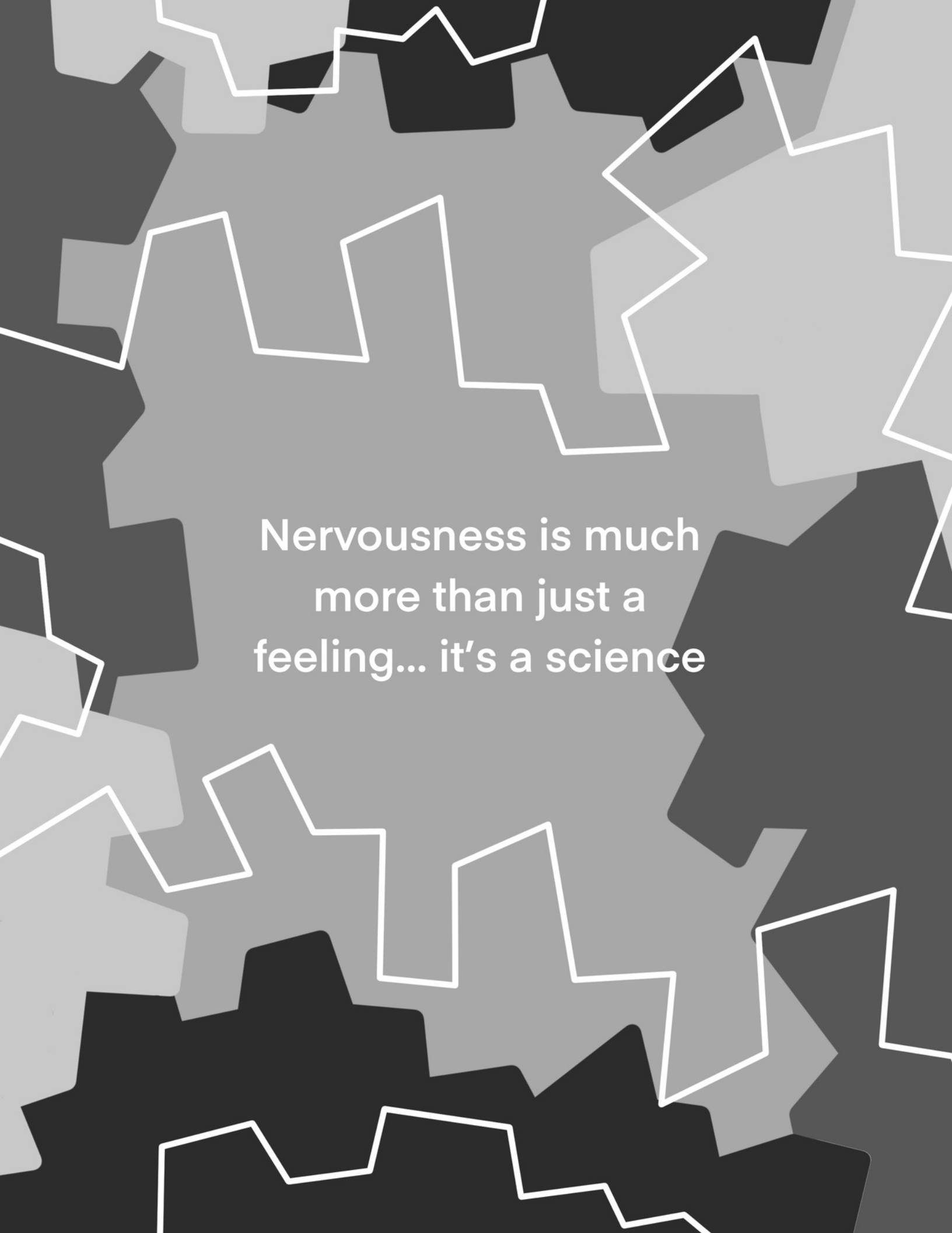
So, um... Why do we, like, use filler words?

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Nervousness is much
more than just a
feeling... it's a science

Why do we shiver when presenting in front of a crowd?

Aaron Zhao

Kayla steps onto a stage, the spotlight cast upon her body as she stares out at hundreds of shadowy heads in the audience. An ominous silence engulfs her as her fingers begin to tremble. Her microphone suddenly feels weighted, and her arm muscles tense. Foul-smelling sweat dribbles down her neck as she looks nervously out into the crowd. Opening her mouth, she forcefully squeezes out the words of her speech before slipping backstage and lying down on the sofa in relief.

Though this scene is hypothetical, it reflects a real matter. It is common for presenters to become nervous before or during a performance. Most students have been given the opportunity to give a presentation, in history class for example, and even the most extroverted, confident students will still experience a twang of nervousness. In fact, this response is intrinsic to animal physiology and has been conserved over epochs of evolution; it is “**fight-or-flight**”.


In retrospect, Kayla’s physical and emotional state while on stage can be explained with science. Fight-or-flight is the body’s ability to reflexively and rationally respond to hazards, like stress and fear. It is typically instigated whenever the body is exposed to an unfavourable environment, in which its own vulnerability is emphasized. The human body has many systems, the two relevant systems to this article being the **sympathetic** and **parasympathetic** systems (which work in tandem).

While on the stage, Kayla’s sympathetic system was activated, driving the fight-or-flight response and using the **adrenal glands** to release hormones like **adrenaline** and **noradrenaline** that place the body in a state of alert. Her fingers trembled and muscles tensed as a result of the body bracing itself to dodge from potential harm. While stress perspiration is still a vague phenomenon requiring more research, it is believed that **anxiety sweat** occurs to cool down the body in regions that become hotter due to the influx of blood. As opposed to **heat sweat** (which is essentially salty water), anxiety sweat has more **proteins** and **lipids** and is secreted by a different set of glands: **apocrine glands**. This is why it smells foul...

Contrarily, the parasympathetic system calms down the body, restoring its neutral state. That is, lowering respiration and heart rate, and neutralizing the alerted state of mind.

After all, being fixed by the eyes of strangers while the anxiety and fear of making mistakes penetrates the mind is no simple matter to deal with. And, as it turns out, this nervousness is much more than just a feeling. It’s a science.



The background is a vibrant orange-red color. It features several overlapping, semi-transparent shapes in shades of light orange, pink, and bright yellow. White, hand-drawn style lines meander across the page, some forming loops and others as simple curves. The overall aesthetic is modern, organic, and artistic.

**Powerful tool for
communication that
reveals a whole new
world of meaning**

SO UM... WHY DO WE, LIKE, USE FILLER WORDS?

KAITLYN LIU

Ever been flooded by a plethora of *ums* and *uhs* by an overly excited friend? Ever been the person to tap into that library of *likes* and *you knows* and unconsciously employ an overabundance of them in a conversation? All around the world, people use filler words in speech. We have the well-known *ums* and *uhs* as well as the dreaded *like*. The Irish frequently use *em* while the Chinese employ *zhè ge*; the French have *euh* and the Japanese use *eto* and *ano* and so on. How have these seemingly unnecessary sounds become so prevalent in every language? And despite the stigma of using filler words, why is it that we continue to employ them in everyday language?

2. FILLER WORDS ARE USED TO DIRECT THE FLOW OF CONVERSATION

Discourse markers include phrases such as *anyway*, *to begin with*, and *you know*. According to the Cambridge Dictionary, discourse markers are used “to connect, organise and manage what we say or write or to express attitude.” Essentially, they help to direct the flow of conversation and better convey thoughts. For instance, one could use “*like*” to join two ideas together and allow the listener to understand the connection the person is making. Or one could respond to someone else with a phrase such as “*Yeah, really, I know*” to show the other person that they are interested in what they have to say. Using filler phrases and discourse markers allows individuals to have a real-time glimpse into the speaker’s thought processes and anticipate the speaker’s message, leading to more effective conversation.

Unlike the widely enforced belief, the use of filler words does not indicate insufficient mastery of a language. However, excessive use of filler words can take away from the main idea the speaker is trying to convey. In addition, due to the stigma filler words carry, they may be considered inappropriate for use in a professional setting as most people believe it indicates a lack of sophistication or preparation. A study published in the *Journal of Nonverbal Behavior* stated that “even though *um*’s do not seem to be a product of anxiety or lack of preparation ... the average listener assumes that they are.” Despite this, when filler words are used sparingly and effectively, they can develop into a powerful tool for communication that reveals a whole new world of meaning.

LIKE,


um...

1. FILLER WORDS BUY TIME FOR THOUGHTS TO CATCH UP

Sometimes, words get ahead of carefully planned ideas. In these cases, the use of filler words is to provide the brain with a moment to catch up and secure its thought process. Taking a break while speaking, allows the speaker time to contemplate how to properly convey their point and ensures that the most effective words are used for a strong delivery.

3. FILLER WORDS MAKE THE CONVERSATION MEANINGFUL AND MORE ENGAGING

The majority of people, at least at some point in their lives, have experienced what we know as the notorious “awkward silence.” During this undesirable event, neither party is able to formulate a plan to continue the conversation and is stuck between the threshold of speaking up first or waiting for the other person to bring up a topic. However, the use of filler words can smooth out these hesitant pauses and allow both parties to recognize cues and engage in conversation. For example, a silent pause could leave the listener wondering whether the speaker has finished talking. On the other hand, a filled pause can indicate that the speaker has more to say. Therefore, filler words allow for not only the speaker but also the listener to partake in meaningful conversation.



The languages going
through the mind of a
multilingual speaker can
be remarkably abstract

WHAT LANGUAGE DO MULTILINGUAL SPEAKERS THINK IN?



Calling out to all multilingual speakers out there, do you ever think in different languages? Recently I've been noticing how I've been thinking in Chinese while I'm writing English articles. This bothers me, not only because English is supposed to be my dominant language, but also because it would've been much more effective if I was thinking in the language I was typing.

Hypothetically speaking, there would be two types of multilingual speakers. The first type would think in their dominant language and then translate it into another language. The second type would think in the language that they are currently using.

However, after surveying several people, I realized that it wasn't as simple as I thought it would be. While the majority of participants think in English, only **61%** of them translate their thoughts from English to another language when they speak.

The languages going through the mind of a multilingual speaker can be remarkably abstract. Many of them can't explain how their brain instinctively corresponds certain things to certain languages. A repetitive similarity I noticed was that many people associate math with the language they speak at home. Conceivably, this association may be because they were first exposed to math by their parents, who taught them in that language.


Although people who have been exposed to multiple languages are able to switch between languages semi-consciously, many participants said that their ability to think in different languages directly correlates with how they grew up speaking both. Languages they learned consciously in school would have to be translated from English.

There are exceptions. Situations where people move somewhere with a different official language than theirs can result in their thoughts adjusting. Out of necessity, they can think in a new language. In many cases, a second language can eventually become the dominant language.

Another type of multilingualism is **receptive bilingualism**. This means a person can understand a language but can't speak it. Interestingly, some receptive bilinguals can think in a language they can't speak. When they think in that language, it may even be in someone else's voice.

Languages are a form of communication. It's not just conveying your thoughts to other people. Languages can be used to communicate with yourself.



The background is a vibrant, abstract composition of various shades of teal and green. It features large, overlapping organic shapes and two prominent white wavy lines that meander across the frame, creating a sense of movement and depth. The overall aesthetic is clean, modern, and visually appealing.

**Sometimes they give
away a lot, sometimes
they're subtle hints**

WHAT ARE THE USE OF OUR EYEBROWS?

ANNE SUN

Our eyebrows seem like the most useless body part. In a way it's not even a body part because it's body hair and our body hair doesn't really do much. So, other than making or breaking our daily look, do our eyebrows have an actual function?

OUR EYEBROWS HELP US COMMUNICATE:

One very obvious role of our eyebrows is communicating our emotions. Our eyebrows are a huge giveaway on how we're feeling. Sometimes they giveaway a lot, sometimes they're subtle hints. Depending on the movement of our eyebrows, people can read our facial expressions.

RAISED EYEBROWS:

The first of the two most commonly seen examples of eyebrow communication. When we raise our eyebrows it signifies that we are in shock or disbelief. However, different people have different ways of expressing their emotions. Some people also raise their eyebrows when smiling to come off as friendlier and give off a better impression.

SCRUNCHED EYEBROWS:

The second most common example of eyebrow communication is scrunching your eyebrows. This also counts as lowering your eyebrows. When people are angry, sad, confused, or worried, their eyebrows scrunch up. Scrunched up eyebrows most of the time is the expression of negative emotions. If you see anyone scrunching their eyebrows at you, watch out!


EYEBROW MOVEMENT:

People move their eyebrows to signal something. Different people have different ways of signalling. An example of eyebrow signaling would be flashing your eyebrows up. This gesture is usually a playful gesture similar to a wink. Other people may have one eyebrow up one eyebrow down movement. In cartoons we see this often as it signifies confusion.

Our eyebrows are a lot more useful than we think. A big part of our facial expression relies on our eyebrow movement. This movement becomes non verbal communication to express our emotions towards the opposite party. By watching someone's eyebrows you'll be able to read their emotions more clearly.

OTHER FUN FACTS ABOUT EYEBROWS:

- Scientists say that as humans evolved our eyebrows became thinner so we could communicate more using them.
- Sometimes people shave their eyebrows in a certain way to give off a friendlier or maybe even more intimidating impression.

The background features a vibrant, abstract design with overlapping organic shapes in shades of pink, magenta, and orange. White, wavy lines meander across the composition, creating a sense of movement and depth. The overall aesthetic is modern and artistic.

The difficulty of a new
language doesn't rely
on your intellect



Anastasia Adamchuk

What are the hardest languages to learn?

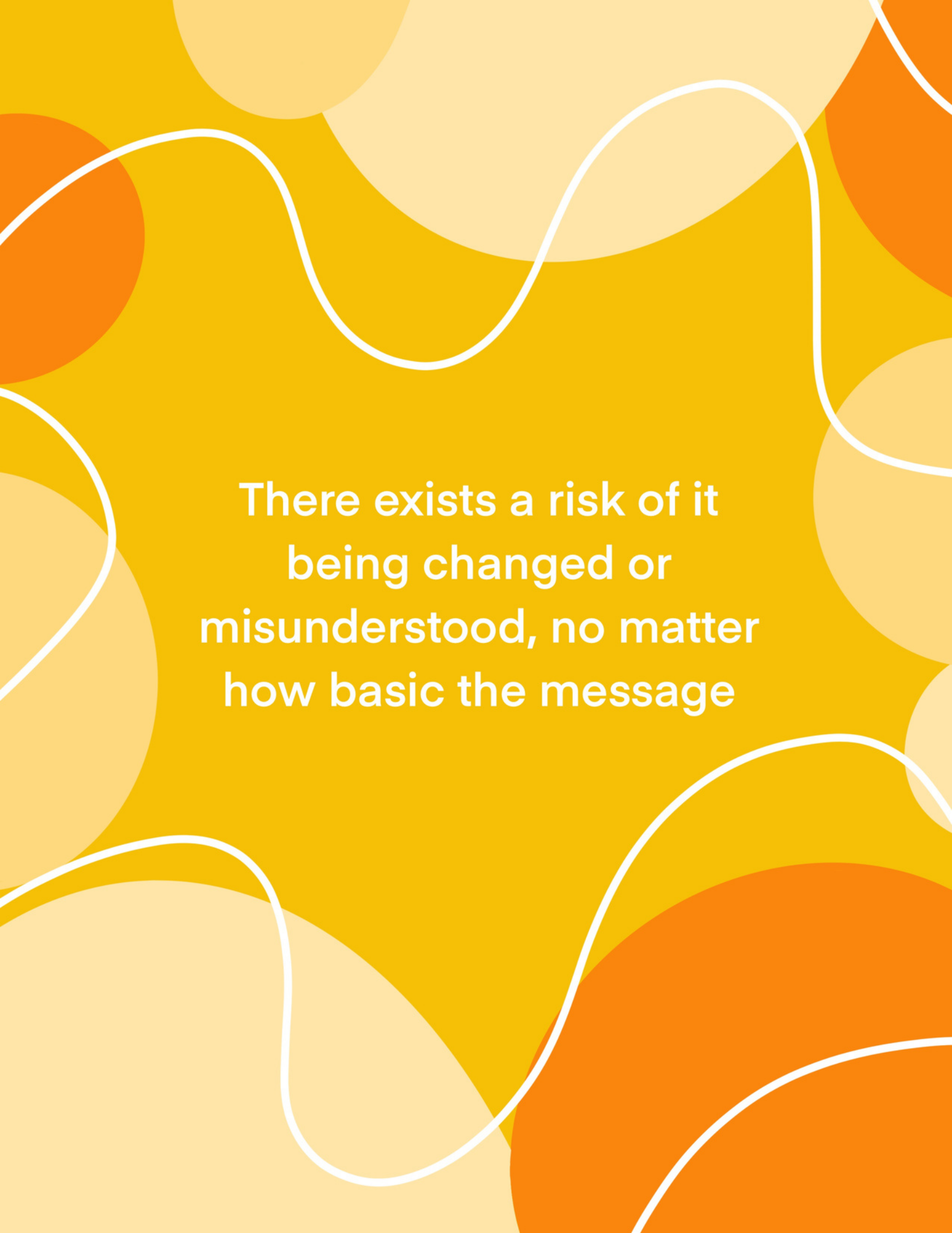
Whether you know one language or a dozen, most of us can agree that the notion of learning an entirely different language can be daunting. There is a false belief that only “smart” people are capable of mastering a new language. In reality, the difficulty of a new language doesn’t rely on your intellect, but rather on the languages you are already familiar with. Modern languages stem from multiple branches of something referred to as “Old World Language Families”. For example, German and English both stem from the Germanic branch, which in turn joins other branches such as the Romance and Slavic in the European subdivision, which expands further to Indo-European languages. That may sound very detailed and slightly confusing, but in general, it means that if you already speak English, learning German will be far easier than a language that is related to a totally different family.

That is why it is difficult to pinpoint the “hardest” language to learn. It all depends on a person’s background and the language(s) they already speak. The languages mentioned here (in no particular order) are from the perspective of someone who speaks only English.

- **Mandarin** is commonly recognized as a very difficult language to learn. It has a lot of tonal variations from English along with its own alphabet. Many words in Mandarin have different meanings, yet are pronounced the same way, leaving the listener to rely on context to understand their meaning.

- Another language that puts English speakers in a stupor is **Hungarian**. It has 26 cases in comparison to the 3 in English.
- Next, we have **Korean**, which features difficult pronunciation. The language itself stands independent of the other branches in the Old World Language Families, resulting in grammar that doesn’t resemble that of English.
- Dialects are also a hurdle language learners have to face. Various regions of a nation may have their own “form” or “variation” of one language, with varying grammar rules. An example of such a language is **Arabic**. When you write, you don’t include vowels and — relying on their placement in a given word — there are 4 ways to write most letters. Learners also have to adjust to reading from right to left.
- In English, you can expect to see an even balance of vowels and consonants in words. You wouldn’t find that in **Polish**. It has quite many consonants, which makes pronunciation very challenging for those who aren’t accustomed to it. In addition, there are different ways of spelling the same sound. It also has 5 grammatical genders and 7 grammatical cases.

Just because a language is hard, doesn’t mean you should never start learning it or give up. It just means you need to work harder towards your goal of becoming fluent. Learning a new language, regardless of its level of difficulty, is a rewarding and fun experience that opens up many doors!



There exists a risk of it
being changed or
misunderstood, no matter
how basic the message

What happens when we miscommunicate?

Bella Wang

Communication is the act of passing ideas from one person to another. Its form is abstract, whether it's verbal, written, or conveyed through day-to-day objects. It can be a message found in music, symbols, and even body language. Normally, this message passes between the sender and the recipient easily...however, whilst the message makes its way between the two, there exists a risk of it being changed or misunderstood, no matter how basic the message is.

A good example of when miscommunication can happen is during a game of **telephone**. The participants line up in a straight line, one after another. The first person in the line would come up with a phrase or action, then pass it on to the second person behind them. The second would pass it to the third, with the pattern repeating until this process stops at the very last participant. Finally, the message that reaches the last person is announced and compared to the original phrase. Although this game seems super simple, participants are often surprised by how much the two messages can differ.

So...why does miscommunication happen? If we have such advanced communication systems all over the world with multiple ways of passing messages, why is miscommunication still such a common problem? We all have our own definitions of words, our own opinion on different matters. As shown in a study called the **Bouba/Kiki effect**, perception can be easily affected by many different aspects, like the way words sound. Participants were shown two shapes: one with sharp spikes, the other a big blob. 95% of people associated the word Kiki with the sharp shape, and Bouba with the blob. The theory is that the letter 'k' sounds a lot sharper, and the letter 'b' sounds round. Frequently, miscommunication happens when experiences, background knowledge, or opinions differ.

Miscommunication can happen frequently in the workplace, at school, or even at home. Sometimes, this common problem can occur in the worst possible places, like in the healthcare industry. You can imagine how it would turn out if there were any misunderstood messages between the doctor, patient, or pharmacist. So...how can you prevent this? Some tips for better communication are stating your message clearly and concisely, not assuming anything or keeping it minimal, and always keeping in mind that texting or emails can lead to misunderstandings quite easily. Three essential skills that you should practice more are listening, thinking before you speak, and asking questions. These can all help prevent miscommunication before it happens.



"If we have such advanced communication systems all over the world with multiple ways of passing messages, why is miscommunication still such a common problem?"

TEENLYTICAL

EXPLORING SCIENCE SINCE 2019

Teenlytical is a science/politics news website run by an ambitious, teenage team.

Our website name is a portmanteau of two words that summarize what who we are and what we do: “teen” and “analytical”.

As a group of teenagers fascinated by science, our goal is to provide accessible, comprehensible information to teens around the world.

Stay tuned for upcoming magazines!



CONTENT TEAM

WRITERS

Anastasia Adamchuk
Kaitlyn Liu
Linda Luo
Anne Sun
Bella Wang
Aaron Zhao

EDITORS

Muhan Sun
Aaron Zhao

ARTISTS

Anastasia Adamchuk

GRAPHIC DESIGNERS

Anastasia Adamchuk
Kaitlyn Liu
Aaron Zhao