



What Can Neuroscience Tell Us About How Your Brain Processes English? 🧠 11 Surprising and Revealing Facts

This is all about what neuroscience can tell us about what is happening in your brain when you are using a language, and what this means in terms of how you should learn English effectively.

Take a moment to consider your brain and what's going on in there 🧠

Use your brain, to think about your brain.

More specifically, use your brain now to just think about what's happening inside your brain when you use your brain to speak English.

Think about all those synapses flashing, those neural networks fizzing, those connections and nodes and all those little grey cells buzzing and doing whatever they do in various parts of your brain, inside your skull,

in your head even right now as you listen to this in English. How exciting.

What if we knew what was really going on in there?

Where is all the English being processed?

Is it all happening in one single “language centre” somewhere, or does the brain use different areas for different tasks?

How does the brain deal with remembering grammar and vocabulary, formulating English when you speak, decoding what you are reading and listening to?

I have found a very interesting article, which I am going to read through. I will explain it as I go.

Then I will summarise all the main conclusions in the article, and I will make absolutely sure that the information is delivered to you and your brain very clearly, so you can go away and make any necessary changes to the way you use your brain to learn English - like maybe just taking your brain out, giving it a wipe, blowing on it, running it under the cold tap for a while, turning it off and then turning it on again, maybe whacking it against the wall a couple of times, before popping it back into your head and just carrying on, but much more successfully, and effectively than before.

The article in question is called **“Eleven Surprising Facts about How the Brain Processes Language, That Every Teacher Should Know”** and it was written by *Gianfranco Conti PhD* and published on his website.

Now, I know what you're thinking. You're thinking, "Luke, this is great, but who is this *Gianfranco Conti* and why should we believe anything he says, or writes?"

Well, here is this from his website:

*Dr. Conti has nearly **30 years of experience** teaching French, English, German, Italian, and Spanish across various levels, including primary, secondary, further education, and university. He has also served as Head of Languages in secondary schools in Britain and abroad. He is currently a **Visiting Fellow at the University of Reading**. (I hope he's enjoying the visit)*

Dr. Conti holds the following academic credentials:

- **PhD** (Applied Linguistics)
- **MA** (TEFL - Teaching English as a Foreign Language)
- **MA** (English Literature)
- **PGCE** (Modern Languages and P.E.)

Gianfranco Conti is widely respected and influential in the language teaching community, especially among classroom practitioners.



He's the one on the left, by the way.

Right, so I think this means Gianfranco's words and wisdom on this topic are certainly valuable and definitely worth paying attention to. Also the article has references to about 20 academic sources to back up everything he says, so it's solid stuff.

But, listeners, if you have anything to add, any differences of opinion, of course you can express them in the comment section.

The article

Let me read through this and stop sometimes to give my thoughts and explanations. I will draw specific conclusions about learning English from this in a moment.

As you read, think about what these facts about the brain mean in terms of how you learn English.

👉 Skip **Table 2**, Skip the **Implications** section. In the second paragraph, skip the bit from "**Although traditional textbooks...**"

[Eleven surprising Facts About How the Brain Processes Language That Every Teacher Should Know](#)

CONCLUSIONS ABOUT LEARNING ENGLISH + SPECIFIC ADVICE FOR LEARNERS

1. English is processed by the whole brain not just one "language centre" → learning must be multisensory

Conclusion

Language uses motor, auditory, visual, memory, and reasoning systems

simultaneously. Mix it up and practise several skills at the same time.

Advice for learners

- **Don't just read, or just study grammar rules in isolation—listen, speak, watch, write, repeat, move your body.**
For example: listen to an episode while reading the transcript *and* saying key parts aloud.
Try to practise several skills at the same time. Practise speaking scenarios by acting them out, on your feet sometimes.
- **Use gestures when learning expressions**—it creates stronger memory traces. Use your hand and body to emphasise while you repeat lines of English. I've always said - speak English with your whole body. It's not just a mouth moving and words coming out - you use your whole body to express yourself. Mean what you say.
- **Watch videos with subtitles**, then without, to combine visual + auditory pathways. Read me while I speak, then read only, then listen only - or any combination of those things. Switch between different modes.
- **Shadow** (repeat with me) to activate motor + auditory systems at the same time.
- Subscribe to LEP Premium and just do everything I tell you to do.

2. Grammar and vocabulary are stored in different memory systems

Conclusion

Vocabulary is learned through declarative memory (fast to acquire, easy to forget).

Grammar is learned through procedural memory (slow to acquire, becomes automatic).

Expect to learn grammar and vocabulary in different ways and at different speeds. Expect different things from the way you learn these

two systems, and practise them differently.

This is an important one, so let's talk about declarative memory and procedural memory, and how the brain uses them both for different language systems.

Declarative and Procedural Memory - A Detailed Look

Declarative memory and **procedural memory** are two different kinds of long-term memory, and the distinction is particularly useful when thinking about language learning.

Declarative memory = knowing *that* (a fact or piece of information)

Declarative memory stores information that you can consciously recall and describe. It includes facts, concepts and events.

For example, knowing that:

- Paris is the capital of France.
- *Went* is the past tense of *go*.
- The form of present perfect is has/have + past participle.
- The word *reluctant* means “not willing or eager to do something”
- what you did last weekend

It's called **declarative** because, in principle, you can *declare* the information: you can consciously bring it to mind and tell somebody about it.

Declarative memory is usually divided into semantic memory (facts and knowledge) and episodic memory (memories of experiences and events).

Procedural memory = knowing *how to do something*

Procedural memory is memory for skills, habits and procedures. Crucially, you can often use this knowledge without consciously thinking about it.

For example:

- riding a bicycle
- typing
- tying your shoelaces
- playing a familiar chord on a guitar (if you are a guitar player)
- producing the sounds and rhythms of your native language (just speaking)
- automatically saying *I went to the shops* rather than stopping to think: “The past tense of *go* is *went*. *I* is the subject of the sentence, *the shops* is the object, we need a preposition to add an object to an intransitive verb, ergo “*I went to the shops*” etc.

A classic example is riding a bike. You might be extremely good at it but find it surprisingly difficult to explain exactly what you're doing with your body to maintain balance. The knowledge is expressed through performance rather than conscious recollection.

The distinction is really interesting and important for language learning

Obviously, you know this basic rule:

“To make the third-person singular present simple, add **-s** to the verb.”

You have stored some **declarative knowledge** about English.

But when you're having a fast conversation you might say:

“My brother work in a bank.”

OK, maybe you wouldn't make that mistake. Not you, right? Oh no, never. Let's say “some other learner of English who doesn't listen to Luke's English Podcast says this, ok...”

They know the rule about 3rd person singular present simple, but they haven't completely **proceduralised** it.

During spontaneous speech, there isn't enough time to consciously retrieve a grammar rule from declarative memory, apply it, choose vocabulary, pronounce everything, listen to the other person, formulate the next idea, etc. It doesn't work like that, as I am sure you have noticed whenever you've learned a "rule" in English and then felt frustrated because it doesn't convert to fluent, accurate speech.

Compare that example with a more proficient speaker (that's you) who simply says:

"My brother works in a bank."

Unless you don't have a brother, or you do have a brother but he certainly doesn't work in a bank, but you get the idea.

When you say that, you probably aren't consciously thinking, *Subject = third-person singular → therefore add -s*.

No. The grammatical pattern has become largely automatic.

This is procedural memory and it helps explain a very common experience among language learners:

"I know this grammar, but I don't use it correctly when I speak!"

You might genuinely know something declaratively, but the challenge is getting to the point where you can use it rapidly and automatically. This means converting declarative memory into procedural memory.

In fact, as I always say, this means being able to do something in English, not just know something in English. Always remember that - English is about what you can do, not just about what you know. So, if you have "learned" a grammar point or some vocabulary, fine. But the real test is whether you can use it to say or write something meaningful and effective.

Advice for learners

- To learn vocabulary (declarative memory)
 - Use **spaced repetition** to practise memory recall, at regular intervals. Come back to test yourself. If you remember words, leave more time before you test yourself on those words again. Various apps like Quizlet and Anki will help you with this.
 - Learn words in **phrases** in context, not single words in isolation.
 - Review vocabulary regularly in order to hammer it into your head again and again.
 - Subscribe to LEP Premium and do everything I say.

- To learn grammar:

- **Repeat the same structure many times** in speaking and writing.
- Use controlled drills, sentence frames, and pattern practice.

This means taking a structure like *present perfect continuous* and using it over and over again, often just with one particular application at a time (e.g. for saying how long for a present activity “I’ve been listening to this episode for ____ minutes” and changing the subject, changing the object, adapting the form as necessary, while trying to make it somehow meaningful.

- Focus on what you can do, not just what you know.
- Use new grammatical structures over and over again until they become automatic.
- Practise reformulating sentences using the grammar you want to learn.
- Spend some time just saying sentences about yourself using the target grammar.

- Subscribe to LEP Premium and do everything I say.

3. Complex grammar requires more brain power

Structures like passives, conditionals, or long clauses activate extra neural regions.

Advice for learners

Learn the complex stuff a little bit at a time and do lots of repetition until it's automatic.

- Don't expect instant mastery of difficult grammar. It's biologically impossible. Take things a little bit at a time.

This is why I often have problems teaching grammar to my classes. Naturally I want all the students to understand what I am teaching, and use it correctly, all within the 2-hour lesson we are in. Like when I teach present perfect continuous with an intermediate class or something.

There is a sort of neurological wall that we eventually hit, as either I or the learners sense that there is still more to learn about a certain grammar point, but it ends up being too much - we run out of time, or there's too much new information to deal with in one session.

- Don't expect to learn an entire grammar point in one go. Correctly using *present perfect* involves lots of mini lessons which are too much to understand all at once. So there's lots of failure, confusion and piecemeal learning.
- Break complex grammar into smaller chunks. Practice one pattern at a time.
- How do you eat an elephant? One spoon at a time.
- Do lots of short, repeated exercises, not one long session.
- Recycle complex forms weekly, not once a month.

- Use simple versions before attempting full complexity.
- Subscribe to LEP Premium and do everything I say.

4. Listening and speaking share the same brain circuits

Conclusion

Listening strengthens the same pathways that we use for speaking. This is good news for LEPsters. Listening actually helps you to be a better speaker.

Advice for learners

- **Listen every day**, even just for 10 minutes. In a weird way, this counts as speaking practice (not as good as actually speaking, but it's in the same zone.)
- Podcasts are great for your English - *who knew?*
- Before speaking activities, do a listening warm-up. On the way to a job interview, listen to English.
- Copy pronunciation, rhythm, and intonation from what you hear. (listen and repeat, shadowing)
- I would add that in some cases it is necessary to do more than just listen & repeat - you also need to understand the phonological system - how sounds are made in your mouth and throat. So, consider investing a bit of time learning about English phonetics.

5. Formulaic chunks create fluency

The brain stores common expressions as single units (chunks). Our brain doesn't learn individual words and then puts them all together. We learn chains or chunks of words as single items.

Advice for learners

- Memorise **phrases**, not single words:
 - “as far as I know...”
 - It depends on...
 - “That’s true to an extent, but...”
 - If I could just come in here
 - “You don’t you happen to know... by any chance, do you?”
 - I’ve been doing this for ages
 - For four years
 - Since Six O-Clock on Saturday the Sixth of September
- Build a chunk bank: a notebook of ready-made expressions, which you can revisit.
- Use chunk-based resources such as sentence builders - like a collocation dictionary.
- Reuse the same chunks in multiple situations until they become automatic.
- Subscribe to LEP Premium and just do everything I say. So many of my episodes are about teaching you English in lexical chunks, and giving you lots of chances to practise them.

6. The bilingual brain activates both languages

English and your first language are processed by the brain at the same time, not separately, so your L1 is bound to have an influence on your English (L2). You can’t expect to eradicate the influence of your first language from your English. You’ll need to find a way for them to co-exist.

Advice for learners

- Don’t worry too much if your native language affects your English. It happens to everyone and it is completely normal.

- But you can reduce this interference by:
 - “Activating” English before speaking (listening first).
 - Doing short priming tasks: vocabulary review, sentence starters, warm-up drills.
- If you notice interference, treat it as a learning opportunity, not a mistake.
- Be aware of these common errors caused by your first language and avoid them. Perhaps keep a note of common L1 errors and their corrections, or false friends. Be conscious of these errors when they happen.

An example of this is French learners saying “I am living here since 10 years.” or “Normally he will arrive at 2PM”

- Of course, having a teacher helps you spot these things and correct them.

7. Learning English physically reshapes the brain

Conclusion

Regular exposure to English causes measurable structural changes in language areas. Listening to LEP actually re-wires your brain. That’s a bit weird isn’t it. It’s like I’m reshaping your brain. Ew.

Advice for learners

- Study little and often, not rarely and intensely.
- Build daily routines:
 - 10 minutes reading
 - 10 minutes listening
 - 5 minutes speaking/shadowing

Listening to a long episode of LEP in stages is fine - in fact it's a good idea. Listen for 30 mins on one day, then listen to more on the next day, and then the rest on another day. This is how most people listen to long podcasts I think. It doesn't have to be in one single marathon listening session.

- Track progress weekly, not daily—structural brain change is slow.
- Consistency beats talent or motivation.
- Sleeping is important - this is when a lot of the physical changes occur in the brain.
- I expect that learning English is good for your brain, but this is another episode for another time.

8. The brain predicts upcoming language

Conclusion

Language comprehension is anticipatory; the brain uses context to guess what is coming next.

This is actually how you understand things - you sort of unconsciously predict what is coming next both in general meaning and in specific wording, and it's interesting that CAE (etc) tests this (with those gapped Use of English sentences), so you should probably practise it - delete every 9th word in a text and put it back in.

Advice for learners

- Learn words in context—stories, dialogues, conversations. It is the surrounding words that help the brain to really understand and remember vocabulary.
- Read and listen to narrow topics (many texts on the same theme) to build prediction skills.
- Use prediction exercises (pause the audio and guess the next word).
- Avoid long vocabulary lists with no sentences or story context.

Language should always be embedded within meaningful contexts in which there is a sense that new information is coming. This is another reason why stories are great for learning.

9. Inner speech is real speech practice

Reading aloud and mental rehearsal (speaking in your head) activate speech-production regions. And by *speech production regions* we don't just mean podcasting studios or places where people speak a lot - like a cafe in Rome or something. No, it means regions of the brain responsible for producing speech. When you produce English in your mind, or read something out loud - you activate the same parts of the brain that you use for actually producing your own speaking.

Advice for learners

- Practise actively “thinking in English”. This doesn't mean just expecting your brain to just start operating in English in the background somehow. It means talking to yourself in your head.
 - In your head, describe what you're doing.
 - Rehearse conversations silently.
 - Review vocabulary mentally on the bus/train.
 - Just talk to yourself silently or out loud.
- Before speaking to someone, do a mental rehearsal of what you want to say.
- If you can't practise out loud, then mouth your sentences silently (move your lips while speaking silently)
- Read texts out loud or silently as if you were speaking them - this means hearing the words in your own head while you read them, or even mouthing the words silently while reading.

You might look like a bit of a weirdo while you do that - muttering to yourself on the bus, but it'll be worth it because you'll be excellent at English and then you will have the last laugh.

- Reading out loud is better for your English. We know this from that episode I did a few years ago
[794. The Surprising Power of Reading Aloud \(Article\)](#) 📖🧠 | Luke's

[ENGLISH Podcast](#)

- Subscribe to LEP Premium and just do everything I say.

10. Emotion improves memory

Emotionally charged vocabulary is stored faster and deeper.

Advice for learners

- Choose learning materials you care about: stories, jokes, personal topics, podcasts that interest you.
- When learning new words, connect them to a personal memory.
- Try to use new words to talk about real things that are meaningful to you.
- Use humour, drama, storytelling, or surprising facts to help vocabulary stick.
- Keep a journal in English that expresses personal thoughts and feelings, and try to use a few new words while you do it.
- English is not some abstract subject that involves memorising information. You should put your heart and soul into it too.

11. L2 (English) processing becomes automatic over time

At first, English uses slow, effortful neural systems. With practice, it becomes automatic.

Advice for learners

- Expect the early stages to feel slow—it's supposed to be. This also applies to the more complex advanced English you have to learn to get from intermediate to an advanced level. It takes time. Sorry about that. But Rome wasn't built in a day.

- Focus on fluency routines. Make routines a regular part of your life. Repeated, systematic practice creates big gains in the future.
 - repeated storytelling (re-tell a story I have told on the podcast)
 - timed speaking (set a time limit and talk about a topic or perhaps the episode you just listened to)
 - speaking journals (an audio journal)
 - retelling episodes
 - shadowing
 - writing a diary every day (even just a few lines)
- Revisit the same structures again and again until they become effortless.
- Don't judge your ability based on speed. Fluency emerges gradually.
- "Fluent in 3 months" might be nonsense (but we already knew that).

12. The most efficient English learning combines various things:

All neuroscience points to a specific formula.

The optimal routine:

1. **Massive listening - Hello! Listen to LEP regularly.**
2. **Reading with interest and emotion - choose reading materials based on how much they appeal to you**
3. **Chunk-based learning - see English as little phrases and groups of words**
4. **Repeated speaking practice (shadowing + storytelling) - listen & repeat - use LEP Premium!**
5. **Daily exposure - get English in your life every day. A 2 hour class once a week is good, but not really enough.**
6. **Contextualised vocabulary - never study vocabulary by looking at**

isolated words in a list

7. **Repetition with variation** - repeat what you hear, and do this with different things
8. **Mental rehearsal** - say things in your head before you do them out loud
9. **Emotional engagement** - learn English in your heart, not just your mind
10. **Predictive routines** - try to predict what is going to come next - which word, which phrase, which point
11. **Long-term fluency training** - it takes time, it's a long road, it's like climbing a mountain - step by step!

Do these consistently, and English becomes easier, more automatic, and more natural.

Finally, my pledge to you, my listeners

To be fair, most of this information was not new to me, or probably to you too, but it is very encouraging and reassuring to read it all here in Dr Conti's article and to know that a lot of these understandings are backed up by neuroscience and research, as well as just teaching experience.

But with all this in mind I wanted to make a pledge to you, a promise, if you will, and here it is.

Basically, I pledge to continue to produce content on my podcast that aims to help you progress in your learning of English, and to do it in line with as many of the conclusions that I have discussed in this episode as possible.

So that means...

Providing you with regular English content in audio form, but also in a multimodal format - with video, with text, with pictures where possible, usually in my room but often outside in the world, combining simply the act of talking to you, with English in a multisensory way.

To give you vocabulary in context - always in context, and this means highlighting words or phrases in my monologues, conversations and stories. Helping you to notice language I have used, but firstly delivering that language within a broadly meaningful context - talking about my life, telling stories, having conversations with people. I will always prioritise language in context.

I will always give you content that aims to make listening an easy, enjoyable and personal experience, so you can continue to do it without it feeling like homework. I'll also aim to give it an emotional or personal and subjective element in order to help you remember it more effectively.

I will always highlight English vocabulary in chunks - phrases, with things like common collocations and multi-word expressions, because this is the best way to see and remember English.

I will always encourage you to build healthy habits in your learning, like giving you introductions in which I encourage you to predict what you are going to hear, or notice language being used. (My intros are important, this is why I spend time on them)

I will always try to encourage your inner voice in English by speaking to you directly, and often asking you questions which you are supposed to reply to - either in your head or out loud.

I will provide you with texts that you can read out loud, or just in your head, and these texts will usually be supported by audio and video - so you can hear and watch me read them.

I will find ways to help you recall vocabulary you have learned or that I have taught you, with things like memory questions and vocabulary quizzes.

I will keep this personal and will encourage you to develop a personal relationship with English.

Hopefully this will let you get meaningful repetition, emotional engagement, and sustained multimodal exposure to English.

And all of this is especially true for episodes of LEP Premium where I really bend over backwards to use the medium of podcasting as a teaching tool to the fullest extent possible.

No pressure on you at this point, but I hope you join me for more fun in English as I slowly make my way towards 2000 episodes...

Certificate & Medal Award

