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# The chimp brain and public speaking: Lessons for teachers and learners

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## 1. Introduction

At many an academic conference I have sat through presentations by extremely nervous presenters who were clearly emotionally exhausted once the ordeal was over. I have always done so with a profound sense of empathy, stemming from the knowledge that while experience, practice, and thorough preparation can generally be relied upon to avert a disaster, even teachers with a long track record of successful presentations usually feel at least a little nervous when presenting to an audience of peers. The fact that we spend a typical working day speaking to large rooms full of people—our students—does not make us immune to presentation nerves. For students, the challenge of presenting to an audience, even one made up of friends and classmates, can be little short of terrifying, and understandably so. As teachers, part of our job is to train students to cope effectively with such situations, but our grounding in linguistics and teaching theory does not equip us with the knowledge to do this effectively. To understand exactly why presenters get nervous, and what to do about it, we need to look to the fields of psychology and neuroscience for explanations of exactly what is happening inside the nervous presenter's brain. In this paper I will introduce the *Chimp Model* (Peters, 2012), a mind management programme that explains how our primeval instincts control our emotions, and how those emotions in turn can have a negative effect on out thoughts and behaviour. I will argue that the model not only provides a comprehensive description of exactly what is happening inside the nervous presenter's brain, but also offers a gateway to practical solutions and coping strategies that can benefit teachers and learners alike.

## 2. Neuroscience and language teaching: An awkward relationship

As Sousa (2010, p. 2) observes, "Teachers have taught for centuries without knowing much, if anything, about how the brain works." Only recently has there been much sign of a change in this situation. Certainly, there have been influential works that have addressed the issue of what

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actually goes on inside learners' brains (e.g., Vygotsky, 1978; Krashen, 1981; Gardner, 1993). More recently, there have also been some welcome efforts to bridge the gap between brain science and classroom practice. For example, Wolfe (2010) and Medina (2014) each give a clear explanation of how the brain processes information, and the implications for teaching. Likewise, Tokuhama-Espinosa (2011) seeks to present important findings from neuroscience in a way that is both accessible to and useful for teachers. However, although the latest information and guidance is available for those who go looking for it, it would appear that most teachers today still choose their methods and techniques on the basis of unproven theories, gut instincts, and anecdotal evidence. This is perhaps surprising considering the giant leaps forward taken in some fields of human endeavor in the last century. The ability of modern doctors to diagnose and treat a vast array of once unknown or incurable conditions makes it sobering to think that there are people still alive today who were born in the pre-penicillin age, when what are now considered minor ailments wreaked havoc, and the practice of medicine was still essentially an art form driven more by hope than by scientific knowledge. In language teaching, meanwhile, the proliferation of computers, smartphones, and Internet-based resources in modern classrooms cannot mask the fact that most teachers still have little understanding of how language learning actually takes place. Worse still—and confirming the old adage that a little knowledge is a dangerous thing—many teachers know just enough about neuroscience to be influenced by a range of debunked *neuromyths* (OECD, 2002). Examples of neuromyths include the following:

- *We mostly only use 10% of our brains.*
- *Differences in hemispheric dominance (left brain, right brain) can help explain individual differences amongst learners.*
- *Environments that are rich in stimulus improve the brains of pre-school children.*
- *Individuals learn better when they receive information in their preferred learning style (e.g., auditory, visual, kinesthetic).*

None of these assertions is actually true, but one study of trainee teachers found that each was believed to be true by over half of respondents (Howard-Jones et al., 2009). Another study of teachers' beliefs concluded that "teachers who are enthusiastic about the possible application of neuroscience findings in the classroom, often find it challenging to distinguish pseudoscience from scientific facts" (Dekker et al., 2012, p. 6).

It is not difficult to imagine how such misconceptions spread. For example, it is true that there are sensitive periods during childhood when it is easier to acquire a foreign language, especially pronunciation, but this is often taken to mean that there is a *critical period* after which the opportunity to learn is lost forever. In fact, Goswami (2004, p. 11) found that "there seem to be almost no cognitive capacities that can be 'lost' at an early age." Nevertheless, the *critical period* hypothesis has spawned a generation of teachers who believe that there is a magic cut-off point (age 15 is one claim) up to which the human brain is primed to acquire a foreign language, but beyond which it is futile to strive for native-like competence. This is not the case, and one comprehensive study of US immigrants from non-English-speaking countries concluded only that

"the degree of success in second-language acquisition steadily declines throughout the life span" (Hakuta, Bialystok, & Wiley, 2003). Another example is the bestseller *Outliers* (Gladwell, 2008), which popularized the notion that whatever your chosen field, 10,000 hours of practice is necessary and sufficient to master it. In fact, the research from which the magic number *10,000* was drawn cautioned that there is considerable variation between individuals and across fields, and made a clear and important distinction between generic practice and deliberate, goal-oriented practice (Ericsson, Krampe, & Tesch-Römer, 1993). It did not claim that anyone is capable of becoming an international concert pianist or a world class footballer if only they spend 10,000 hours playing the piano or kicking a football.

One thing, then, is clear: Language teachers are not neuroscientists, and they should tread carefully when drawing on neuroscience for inspiration. That being said, and providing caution is exercised, the field of neuroscience has much to offer language teachers, and the long-overdue recognition of this seen in recent years is a welcome development. As teachers, we have a duty to try to understand as much as we can about how learners actually learn, and this knowledge will come mainly from neuroscience, not from linguistics.

However, for ideas to lead to positive changes in language teaching requires not only that they be true, but that they be presented in a way that is easily accessible to teachers, and that has clear connections to classroom practice. No matter what insights are served up by researchers, few teachers are likely to leaf through the latest issue of *Frontiers in Psychology* in search of inspiration. Thankfully, however, they don't need to, and much food for thought is available through popular literature and the mainstream media. A little knowledge can be a dangerous thing, but it can also be a catalyst for positive change, as I hope to show in the rest of this paper.

## 3. The *chimp model*

In *The Chimp Paradox* (Peters, 2012), psychiatrist Professor Steve Peters explains in layman's terms how different parts of the brain both cooperate and compete to influence our thoughts and actions. The book is not an entirely accurate description of how the brain functions, but it is also not just a theory; it is a simplified version of the science presented in a way that can be used for practical benefit. In essence it is a self-help book designed to teach the reader how to understand and interact with their emotional side, and thus live a happier, more fulfilled life. The model views the thinking brain as consisting of three parts:

1. The human. The *human* is a metaphor for the parts of the brain that think logically and rationally, and make decisions based on facts and evidence. The human's goal in life is happiness and fulfillment, and it is characterized by its flexibility—a willingness to accept alternative points of view supported by facts and evidence—and a sense of balance and perspective.
2. The chimp. The *chimp* is a metaphor for the emotional self—the powerful, impulsive, paranoid part of the brain that thinks emotionally and catastrophically, and makes decisions based on feelings and instincts. The chimp is stronger than the human, and when they fight, the chimp usually wins. In other words, feelings and emotions can and often do override logical thought, which in essence

is why we frequently do or say things that we later regret, or react to situations in ways that we cannot offer a logical or rational explanation for. Every time you find yourself saying *I wish I hadn't said X / done Y*, you are most likely reflecting on a time when your emotional brain overrode your logical brain and briefly took control of your behaviour.

3. The computer. The *computer* is a metaphor for the parts of the brain where programmed thoughts and behaviours are stored. It can think and act automatically for you (e.g., when you tie a shoelace, ride a bicycle, or perform other actions that require little conscious thought). It also serves as a reference source for information, beliefs, and values. These can be constructive habits and beliefs (e.g., *consider all the available facts before drawing conclusions*), or destructive ones that are unrealistic and do not promote happiness (e.g., *expect to be the best at everything you do*). Both the human and the chimp can store information in the computer, and look into the computer for help and advice in deciding a course of action. In other words, *you don't just have to accept that you are the way you are*. For example, if you habitually get nervous in front of an audience—even a supportive audience who are willing you to succeed—this is not just *the way you are*, and not a weakness, but largely the result of destructive beliefs and behaviours stored in your mental computer that cause your emotional brain to take control exactly when you don't want it to.

For visual simplicity in the book, the human, chimp, and computer are shown as residing in the frontal lobe, the limbic system (central brain), and the parietal lobe (upper central brain), respectively. This is not technically accurate—the way functions are spread around the brain is actually much more complex—but offers a working model that can be put to practical use. For a more detailed description of the model, the interested reader is encouraged to read the book, or seek out more detailed explanations (which abound on the Internet). However, for our purposes this basic framework is sufficient to provide useful insights into why learners (and teachers) often get nervous when speaking to an audience. In the following sections we will consider in more detail how the model can explain presentation nerves, and the implications it has for dealing with them.

## 4. Presentation nerves explained

Imagine the situation: You are the next speaker at an academic conference, sitting at the back of the room, waiting your turn. Alternatively, you are a student in a language class, about to give a speech or presentation in front of the class. You have prepared thoroughly and practiced hard. You have every reason to feel confident. However, as your time approaches, you find yourself gripped by a fear approaching panic. On the physiological level, your pulse quickens, your breathing becomes heavier and more rapid, and you start to sweat. Mentally, you feel yourself struggling to focus. You suddenly doubt your ability to recall the opening lines that you thought you had memorized, and can't stop yourself obsessing about what could go wrong: *What if I forget what to say? What if I run over time? What if everyone sees how nervous I am? What if they don't like my speech? What if they ask difficult questions?* The logical answer to any of these questions would be, "*That probably won't happen, and even if it does it won't be the end of the world.*" But telling yourself this seems to do nothing to calm your nerves. This in turn seems to confirm your suspicion that your worries

must be justified. In addition to feeling worried, you now probably also feel somewhat embarrassed and frustrated by your inability to deal with your nerves.

It would be easy to interpret all this as a proof that you are simply a *weak person* who *cannot cope* with stressful situations. Worse still, you might get angry with yourself, telling yourself to *Get a grip!* and *Stop being so pathetic!* As we will see later, this is unlikely to help. In fact, "What you are experiencing when you have strong emotional reactions is very natural and the sign of a healthy mind" (Peters, 2012, p. 15). The chimp model offers a way for you to understand your seemingly irrational behavior, as well as some guidelines for how to deal with it, and to train your mind to react differently.

Recall that the chimp brain—the emotional self—is concerned primarily with survival. This is not surprising. It is only very recently in human history that we as a species have abandoned the jungle and begun living in orderly, regulated societies in which the threat of sudden death from an accident or physical attack is, for most of us, extremely small. Throughout most of human history, our ancestors lived surrounded by threats and danger, in places where letting down one's guard for even a moment could be fatal. The emotional brain—the *inner chimp*—evolved to help you deal with these threats and stay alive in a dangerous world. In the jungle, staying alive depends on acting quickly and decisively, usually via the *fight or flight* response. A habit of staying calm and analysing situations slowly and carefully is generally an asset in the modern world, but would not have helped your ancient ancestors when they came face to face with a hungry tiger or an axe-wielding enemy. Quick, clear reactions based on instinct were essential for survival, and a habit of always suspecting the worst also helped them to stay alive, even if their catastrophic suspicions were only occasionally justified.

The problem we have today is that while society has evolved, our brains have not. Your inner chimp still thinks that you live in a jungle, and still sees threats and danger everywhere. The irrational panic attack that you sense as your time to step up to the podium approaches is due to the fact that your emotional self sees the audience as a potential threat. Your inner chimp cannot understand why you would walk head first into such a dangerous situation and make yourself vulnerable to attack. Your physiological responses to the stress are your inner chimp quite literally priming you to run away from the danger, or if necessary to fight for your life. Meanwhile, the cascade of catastrophic "*what if?*" scenarios playing out inside your head is simply part of the chimp's strategy to convince you that the danger is real and that you really need to take evasive action. The longer you fail to heed the chimp's warnings, the more hysterical the chimp typically becomes.

## 5. Managing your emotions

While most of us have probably at some time encountered something similar to the chimp model to explain the physiological reactions to stress, I suspect that few of us have given much consideration to how the emotional brain competes with the logical brain to control our behaviour, or to how we can train our own minds to react in more helpful and constructive ways to stressful situations. What makes Peters's model a useful resource for teachers and learners is that it offers

practical advice on how to prevent your inner chimp from hijacking your thoughts and actions. The first stage is to learn to identify when your inner chimp is taking control. According to Peters, this is a simple task, accomplished by asking yourself how you feel right now, and whether you want to have the feelings and thoughts you are experiencing. As Peters (p. 40) says, "The golden rule is that whenever you have feelings, thoughts or behaviours that you do not want or welcome, then you are being hijacked by your Chimp." When teachers or learners get a sudden attack of nerves as their time to stand before an audience approaches, I doubt any would see this as a welcome turn of events. However, if you realize that it is not *you* feeling nervous, but *your chimp*, then this in itself is a liberating concept, and an important first step towards positive change.

Once you have learned how the chimp operates, and how to recognize when it is taking charge, you are ready to implement measures to prevent this happening. This is a multi-stage process.

1. Nurture the chimp. Peters describes the emotional self as being much like a pet animal, with a set of drives and needs including territory, food, security, ego, and so on. In order for the emotional self to be cooperative and manageable, its needs must be satisfied. For example, a learner may feel anxious if the teacher has not clarified goals and expectations regarding a classroom activity: Failure to clarify roles is effectively a failure to establish territorial boundaries. In the case of someone with an aggressive chimp that needs to dominate, something as simple as playing competitive sport can be a socially acceptable way to satisfy this need. Likewise, most teachers would agree that it is appropriate and important to praise learners (provided the praise is deserved). Psychologically, this is the equivalent of praise from the alpha chimp, a primary need of all chimps. Indeed, most people are likely to react with negative emotion (rather than logic) if not given praise when they feel it is due.
2. Manage the chimp. Nurturing the chimp by satisfying its core needs puts it in a state in which it can be *managed*. Peters describes three ways to manage a chimp:
(i) Exercise the chimp: Just as a pet may need to release pent up energy before it can be easily controlled, so a child may need to release pent up emotion before he or she can be reasoned with. Adults are no different! From time to time we all need to lend a sympathetic ear to a friend who wants to "vent" about a negative experience or perceived injustice. The friend may have good reason to feel aggrieved or agitated, but the venting process often consists of a rambling and incoherent narrative that paints them as an entirely innocent victim, and the injustice as far graver than it seems to the listener. Alternatively, a comparatively minor failure or setback, especially if unexpected, may at first seem like a disaster to your *inner chimp*. Clearly it is the emotional self that is talking in such situations, but *exercising the chimp* by letting the emotional self have its say may be an important first step. It is also usually a relatively short step. Peters (p. 57) claims that "Most chimps will take less than 10 minutes to express fears or emotions and then will go silent and listen." When it comes to public speaking, exercising the chimp might take the form of one or more emotional outbursts in the days or weeks leading up to your big day about how underprepared you are, how poorly you are going to perform, how much better the other speakers are certain to be, an so on. These outbursts might take the form of confiding in a friend, or simply having a mental conversation with yourself.

(ii) Box the chimp: Using facts, truth and logic, offer the chimp a more suitable response or action to take in a given situation. Peters repeatedly reminds the reader that chimps are stronger than humans, so you cannot "arm-wrestle" the chimp into submission. Put another way, facts and logic have little effect on someone in an emotional or agitated stage. If you are dealing with someone who is worried about an upcoming presentation, you may first need to let them *exercise* their chimp until it is tired and calm and ready to listen to logic. Once they have let out all their fears and anxieties about the upcoming presentation, they should be ready to accept the comforting logic that "It's only 20 minutes," "The audience will be friendly," "You don't have to be perfect," and so on.
(iii) Feed the chimp: This is a metaphor for distractions or rewards that do not address the root cause of stress and anxiety, but prevent the emotional self from taking control at an inopportune moment. For example, in the hour before your big conference presentation you might take a walk around the block to distract the chimp and prevent it from bombarding you with worries and negative thoughts. During your speech you might pause to sip water whenever you start to feel nervous. Focusing on this simple action can be enough to distract your chimp's attention. A reward might be a literal reward (in fact, I have just promised myself that I can eat lunch when, and only when, I finish this paragraph), or might come in the form of praise and recognition (inviting a friend round might provide the incentive to tidy your house, as your chimp wants to be praised for keeping such a tidy house).

## 6. Beyond the chimp—Managing the computer

Earlier we introduced Peters's concept of the *computer* as referring to the part of the brain that stores programmed beliefs and behaviours. Peters divides the information in the computer into four categories:

1. *Autopilots*: Constructive or helpful beliefs, behaviors, or unconscious actions (e.g., a positive self-image, staying calm under pressure, riding a bicycle).
2. *Goblins*: Destructive or unhelpful beliefs, behaviours or actions that are difficult to remove (e.g., believing that your achievements in life determine your worth as an individual).
3. *Gremlins*: Destructive or unhelpful beliefs, behaviours or actions that, with effort, can be removed and replaced (e.g., overreacting to situations, blaming yourself for others' mistakes, focusing on problems instead of solutions).
4. The *Stone of Life*: A sort of personal ten commandments, setting out the core beliefs and values that you want to life your life according to (e.g., family is more important than work, don't expect any guarantees in life, etc.).

In the chimp model, much of the key to a happy and fulfilled life lies in managing the contents of the computer. As regards public speaking, it is worth seeking out *gremlins* that hinder your performance and increase anxiety, and working on replacing them with *autopilots*. Gremlins would include the following beliefs:

*- I must please everyone.*
*- I should be the best speaker at the conference.*
*- I need to look like an expert in the field I'm talking about.*

None of these beliefs is helpful, or realistic. For example, with a large audience it is unlikely that everyone will agree with what you say, or find your speech relevant and interesting, and it is unreasonable and unnecessary to expect this to be so. Also, note that words like *must, should*, and *need to* are typical of gremlins. Helpful *autopilots* are more likely to be expressed in terms of possibility with words like *can* and *could*. For example:

*- I can try to please, but it's unlikely that everyone will be impressed.*
*- I can be my best. I don't need to be the best.*
*- I can be honest about things I don't know. People respect honesty.*

In this way, it is useful for both teachers and learners to map out what their goals are with regard to a presentation. This could easily be turned into a classroom activity in which learners are encouraged to develop constructive goals and expectations with regard to an upcoming presentation.

## 7. Dealing with stress—A reevaluation of traditional advice

It is now worth considering how typical tips for overcoming presentation nerves fit into the chimp model. Whatever the source, the advice for nervous presenters tends to be similar, and some of the most common tips are listed below.

- "Take deep breaths."
- "Set realistic expectations."
- "Think positive! Keep negative thoughts at bay."
- "Map out your anxieties beforehand."
- "Arrive early to get used to the venue and the atmosphere."
- "Practice lots."
- "Use positive visualization—Picture yourself giving your presentation as planned."
- "Smile!"
- "Pause regularly."
- "Check out the room beforehand."
- "Focus on friendly faces in the audience."
- "Sip water at regular intervals."
- "Exercise in the morning to relax and release nervous energy."

There is nothing wrong with any of these tips. On the contrary, following through on them is almost certain to lead to a better presentation. However, what is interesting, and what takes

us to a deeper level of understanding of exactly why these tips work, is the realization that every one of them can be seen as a form of *chimp management*, fitting neatly into one of the categories discussed earlier. I would categorize the tips above as follows.

- Exercising the chimp (i.e., admitting that you're nervous): *Map out your anxieties.*
- Feeding the chimp (i.e., actions to prevent your emotions getting the better of you): *Take deep breaths; Pause regularly; Sip water at regular intervals; Exercise in the morning.*
- Boxing the chimp (i.e., convincing yourself that there is no cause for alarm): *Practice lots; Arrive early; Check out the room; Smile; Focus on friendly faces; Think positive.*
- Autopilots (i.e., helpful beliefs): *Positive visualization; Set realistic expectations.*

Tips and advice are likely to be more effective if we can also explain *why* they work. Hence the classification above is potentially more useful than just a random list of ideas and suggestions. As regards helping learners to deal with presentation nerves, the question is how much detail is appropriate. Clearly learners in an English class come to study English, not psychology, and any formal lecturing on the psychology of presenting should obviously not be too time-consuming. With a class of 1st-year medical students preparing to give short oral presentations, I recently sought to kill two birds with one stone by giving a model presentation in front of the class, on the subject of the chimp model. Students were naturally interested to see an example of the kind of presentation they would have to perform, and the fact that the speech contained practical tips for successful presenting was an added bonus. Moreover, the speech was directly connected to the material studied in class, as "Stress" was one of the topics covered. This also provided an opportunity to emphasize three vitally important points that are often overlooked, and yet are recurring topics in *The Chimp Paradox*: (1) Irrational stress and worry is a normal product of a healthy mind; (2) A tendency to succumb to stress and worry is not a fixed character trait of "weak" people; (3) With focus and effort, we are all capable of dealing with stress.

## 8. Conclusion

*The Chimp Paradox* is entertaining and informative in equal measure. Although not a scientific publication, it contains explanations and advice that have a thorough grounding in science. While his advice is for life in general, Peters has much wisdom to offer anyone who has to speak in front of an audience. His insights also offer pause for thought for teachers who want to help their learners deal with presentation nerves. Typical advice such as "Be brave!" or "Don't be nervous!" may be given with good intentions, but is likely to be counterproductive with learners who do not consider themselves brave, and habitually get nervous when standing before an audience. The chimp model offers a way to design more effective coping strategies with a firm basis in neuropsychology. It also lends itself to a range of self-reflective classroom activities in which learners can focus on nurturing positive thinking, and develop their own techniques and strategies for dealing with presentation nerves.

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