

# Dispelling the myth of the natural-born linguist

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*An individual's mindset about the perceived malleability of ability or intelligence is known to strongly influence a person's other beliefs, behaviours, and motivation. This article seeks to provide justification for holding a 'growth' mindset in the domain of foreign language learning. It discusses contemporary understandings of ability and intelligence in a range of fields and focuses on deconstructing the belief that language learning ability is based primarily on an immutable, innate talent. Instead the article illustrates how it is best understood as a dynamic potential that individuals can develop to varying degrees depending on a complex range of personal and contextual factors. The article concludes with a discussion of the implications of this overview of the literature for research and pedagogy.*

## Introduction: mindsets

Mindsets, also known as 'implicit' theories in psychology, are the specific set of beliefs individuals have about the malleability of a certain trait or ability (Dweck 2006). For example, intelligence can either be viewed as being something that can grow and develop, a growth mindset, or as something that is predetermined and unchangeable, a fixed mindset. Within psychology, Dweck and her colleagues have repeatedly shown how holding a particular mindset about intelligence can have a considerable impact on other learner beliefs, behaviours, and ultimate academic success. Various studies have indicated that a learner with a growth mindset is more likely to be motivated to set challenging goals, attribute their successes and failures to factors within their locus of control, and will be willing to run the risk of failure in the pursuit of growth and learning.

A language learning mindset reflects the extent to which a person believes that language learning ability is dependent on some immutable, innate talent or is the result of controllable factors such as effort and conscious hard work. Given the widespread belief in the existence and importance of a natural talent or aptitude for language learning, it is possible that a more fixed mindset may be especially prevalent in the domain of foreign language learning (cf. Mercer and Ryan 2010). Language learners holding such a mindset are more likely to avoid challenges which risk failure, set themselves lower goals, and are in danger of becoming demotivated possibly to the extent of a state of helplessness in the face of the perceived futility of engaging in any strategic behaviour. Learners with a fixed mindset believe that if you do not have the 'gift' for languages, then it is hopeless to try and make any real efforts to improve as your abilities as a linguist cannot be

developed to any great extent. The perils of a strong belief in the myth of the natural-born linguist are self-evident.

While our understandings of mindsets within the domain of foreign language learning remain extremely limited at present given the absence of empirical studies in this area (cf. Mercer and Ryan *op.cit.*), insights from extensive work within psychology already indicate the importance of encouraging both learners and teachers to believe in everybody's potential to learn and develop their abilities, in other words to hold a growth mindset. However, the myth of the naturally gifted linguist is stubbornly persistent among many learners and even teachers. Therefore, in this article, I would like to explore developments in an array of fields, in order to challenge the validity of this myth. I hope to show how natural aptitudes and innate talents are currently being assigned a considerably diminished role in a range of achievements and thus provide some justification for supporting a growth mindset. It is hoped that this article will encourage teachers and learners to conceptualize language learning in a way that avoids giving undue emphasis to natural aptitude and is thereby more empowering to learners of all ages, genders, and backgrounds.

## Quantifying intelligence and aptitude

Since the beginning of the twentieth century, IQ tests have had a considerable impact on modern thinking about intelligence as a measurable, fixed quantity. During the First World War, the popular Stanford-Binet IQ test was adopted by the US military and while it has undergone some revisions over the years, the test has remained popular being used by both companies, educational institutions, and even in respect to immigration policies, often with high personal stakes for those taking it, although its popularity has declined somewhat in recent years. One of the lasting legacies and ongoing side effects of this and other related IQ tests is their implied message that intelligence is an entity that is fixed and quantifiable. Ironically, the original inventor of the test, Alfred Binet (cited in Shenk 2010: 29), argued against such thinking and criticized those who believed that intelligence cannot be increased and called for people to 'protest and react against this brutal pessimism'.

Increasingly, the test has come under criticism for a range of reasons including the potential variation in responses according to gender, class, and culture and also disputes over various statistical, correlational, and other mathematical calculations. However, the most fundamental criticism has been that such intelligence tests tend to only address one general type of intelligence (known as 'g'). A critic of general IQ testing is Robert Sternberg who has written extensively about different types of intelligence and how IQ tests measure only a small part of the range of an individual's intellectual skills. Instead, he has argued in his triarchic theory of intelligence (Sternberg 1985) that different types of intelligences are dynamic, contextually sensitive and adaptive. A fellow critic perhaps better known within second language acquisition (SLA) is Howard Gardner. He has suggested that there are at least eight different types of intelligence potentials that can be developed and nurtured under the right environmental and contextual conditions. In clarifying the nature of his multiple intelligences, he explains that he views an intelligence as a biopsychological potential that 'can be realised to a greater or lesser extent

as a consequence of the experiential, cultural, and motivational factors that affect a person' (Gardner 1999: 82). Fundamentally, at the heart of his theory is the belief that human minds differ and cannot sensibly be conceived of in terms of a single intellectual dimension. His work stresses intellectual diversity and individual uniqueness as well as the potential rather than end-product state of intelligences in all humans.

In similar developments within the domain of language learning, a person's aptitude for languages has also been quantified and measured using a series of tests. Following the Second World War, Carroll and Sapon (1958) developed 'The Modern Language Aptitude Test' (MLAT), initially to help the US army find individuals who were likely to succeed at language learning. This test and others based upon it have made a considerable impact on the perceptions of and beliefs about language learning abilities. Once again, the message implicit in the existence of such tests was that some individuals had a certain measurable amount of aptitude for languages and this was fixed and unchangeable over time, irrespective of the person's levels of motivation, other personal variables, and any potential contextual affordances or interpersonal factors.<sup>1</sup> With the emergence of the communicative approach, the test, which was based on audiolingual methods, has lost ground in terms of relevance and perceived validity by practitioners and researchers (for example Sáfár and Kormos 2008). More recently, fundamental concerns have been raised about the nature of aptitude tests, the validity of constructs measured, and the degree to which they reflect contemporary theoretical understandings of potential abilities (ibid.). Consequently, there has also been a shift to the recognition of a more differentiated view of multiple aptitudes contributing to varied aspects of language learning abilities at different stages in the learning process, as well as more situated understandings considering particular and dynamic contexts, rather than a single, unitary static aptitude. As Ranta (2008: 151) explains, rather than learner aptitude being equated with a test score, it is now understood as a reflection of an individual's varied strengths and weaknesses in a range of cognitive abilities, all of which interact with other factors, such as motivation and contextual affordances.

Both general intelligence and aptitude testing have experienced a shift towards more contextually sensitive, dynamic modes of understandings, which recognize a broader, more diverse range of multiple intelligences and abilities that can be affected by an individual's experiences within the domain and various other personal and contextual variables. While it seems likely that some form of different aptitudes may exist, the emphasis is now more clearly on their multifaceted nature and potential for development and change across time and place.

## Expertise and genius

Another area concerned with the nature of ability focuses on the skills of those who excel and become experts in a particular domain. Within SLA, expert language learners were frequently investigated under the body of work known as the 'good language learner' (GLL) studies. The intention of much of the initial work was to facilitate an understanding of what GLLs do and consider how this knowledge could be used to help less successful language learners. However, this early work came under criticism for failing to adequately recognize the potential for individual learner differences and

contextual variation. As a result and in line with other theoretical developments, attention has moved from an interest in ‘the good language learner’ to ‘good language learners’ (plural) and the complexity of multiple variables and individual differences, which together contribute to language learning success (see Griffiths 2008). It is increasingly accepted that there are likely to be a myriad of pathways to success, each as unique and individual as the person taking the route, affected by a wide and complex range of factors both personal and contextual and driven by a strong sense of motivation. In their conclusions about the state of contemporary understandings of GLLs, Oxford and Lee (2008: 312) conclude that ‘there is no single good language learner model’, and instead they highlight individual variation and the more diminished role of aptitude given the potential influence in developing learner abilities of motivation, strategic behaviours, and facilitating affordances.

Within psychology-based studies, much work has examined the notion of expertise in a range of domains. Perhaps one of the leading figures involved in this body of work is K. Anders Ericsson. In a key paper, he and his colleagues convincingly argue that differences in expert performances are attributable primarily to deliberate practice over an extended period of time as opposed to any sense of innate talent (Ericsson, Krampe, and Tesch-Römer 1993). Deliberate practice is a special form of repetitive practice that breaks down a holistic ability into subcomponent skills, which are then practised repeatedly, almost drill-like. The authors stress that this form of practice is not necessarily an inherently enjoyable activity and as such requires passion, motivation, dedication, and perseverance. To become an expert, they explain that a person must engage in many hours and years of practice, leading to their frequently cited figure of 10,000 hours over ten years, and the individual also needs to be willing to risk failure, while maintaining an ability to reflect and learn from their experiences. While expertise may vary across domains in how it is understood and defined, he and his colleagues have shown that there are commonalities in how expertise is developed and these do not reside in innate abilities, although they acknowledge the potential for individual differences in predispositions but rather in how the person approaches the task of enhancing their abilities.

In explaining the development of expertise, Ericsson *et al.* (ibid.) also stress the importance of significant others such as parents, mentors, and teachers in supporting children in the development of expertise in terms of the beliefs they convey (especially their mindset beliefs), the motivation they transmit, and the opportunities they facilitate for the child to develop their own interest and have time and opportunity to engage in deliberate practice. They show that the individual’s context can constrain or support a person in their striving for excellence depending on the opportunities available. The role of context and affordances of culture, family, and significant others is also highlighted by Gladwell (2008). By considering the life histories of a series of highly successful individuals and groups, he argues that they excelled not only because of who they are and how much effort they expended, but essentially because of their surroundings, particularly in terms of time and place. He argues that success is not just a question of

individual merit but also a product of the world in which a person grows up and hence, the affordances they have.

Extreme cases of expertise are often referred to as ‘genius’, and there have been a number of studies which have attempted to deconstruct the myth surrounding the natural-born genius. Perhaps one of the best known is a book entitled *Genius Explained* by the psychologist Howe (1999), in which he examines the lives of famous figures such as Charles Darwin, Michael Faraday, and Albert Einstein. Examining their biographies in detail, he shows how their outstanding achievements are the product of a combination of environment, personality, and hard work. He explains that whilst expertise is seen by many as ordinary and something that can be gained following lengthy periods of practice and training, genius is often perceived as being somehow magical, rare, and a form of inborn brilliance. In fact, he argues that expert and genius are achieved along similar paths of doggedness, persistence, capacity for intense concentration, and sheer hard work. He concludes that based on the evidence examined, ‘the innate gifts or talents that are commonly believed to be possessed by a minority of individuals who are thereby imbued with a capacity to excel in particular areas of expertise are probably mythical rather than real’ (ibid.: 200).

The expertise studies and those analysing the lives of individuals exhibiting so-called genius have both contributed to dispelling the myth of the natural genius or innate talent and have provided valuable insights into the complex interplay of factors that can underlie exceptional performance or abilities. Fundamentally, the findings suggest the potential for everyone to achieve degrees of expertise in a specific domain as well as the relative ‘ordinariness’ surrounding genius achievements. They show how a range of factors such as personality, contextual affordances, and environmental support contribute to the development of an individual’s skills and ultimate successes.

## Neuroscience and genetics

Other contributions towards demystifying the idea of the natural genius stem from studies exploring the interaction between genes and environment as well as research investigating the nature of the brain. In the first area, studies have examined the relative role of genes in dictating a person’s abilities and intelligence. Shenk (2010) manages to distil this complex field into comprehensible terms for the layperson. He argues in favour of the emerging view held by some geneticists and neuroscientists that, rather than attempting to distinguish whether one’s abilities or traits stem from nature or nurture, it is more likely that each individual has their own unique developmental path, which is referred to as  $G \times E$  to signify the dynamic interaction between both one’s genes (G) and the environment (E). Therefore, as opposed to the traditional dichotomy, he explains that there is a need for science to understand the ways in which both genes and environmental factors interact together in the development of abilities. Indeed, work in the field of epigenetics suggests that even genes themselves can be changed and altered by outside influences and environmental factors (ibid.). Shenk thus concludes that, ‘intelligence is not an innate aptitude, hardwired at conception or in the womb, but a collection of developing skills driven by the interaction between genes and environment. No one is born

with a predetermined amount of intelligence. Intelligence (and IQ scores) can be improved' (ibid.: 29).

A second relevant area of research examines the brain functioning of exceptional individuals. Darold Treffert, who studies the brains of savants, explains on his website (<http://www.daroldtreffert.com/>) that his work in this field also offers insights into the general functioning of the brain and has caused him to reflect on what skills may lie dormant within every individual. As Shenk (op.cit.: 75) explains, the physical damage in the brain that can cause savant syndrome is not what creates the ability in the individual but rather it creates the opportunity for the ability to develop. A well-known savant, Daniel Tammet (2009), cogently argues for a balanced view of abilities, which does not view success or genius as merely a product of innate talents. Examining the work of neuroscientists such as Treffert and reflecting on his own personal experiences as a savant, he explains that he has come to believe that 'everyone is born with certain talents, which dedication and hard work help to realise' (ibid.: 57). He views talent as being something dynamic that emerges from the complex interaction of genetic and environmental elements. Specifically, he explains how adult brains are no longer thought of in static, rigid terms but are now more widely understood as supple, dynamic organs, which can grow and change throughout a person's lifetime; a potential referred to as neuroplasticity.

Essentially, these developments in neuroscience and genetics argue against biological determinism and in favour of a development, interactionist view of ability, which suggests that a person's abilities emerge from the interaction between their genetic predisposition and their environment and that this is an ongoing, dynamic process. Such a view opens up the potential for everyone to excel and not be held back by the supposed hard-wiring of their brains or their genetic inheritance.

### **Implications for research approaches: complexity theory**

It becomes apparent even from this brief introductory overview that the factors contributing towards an individual's continually emergent abilities as a language learner are potentially complex, manifold, and intimately interconnected with the person's environment. In view of this, the best theoretical approach to help understand how language learner abilities develop would seem to be offered by complexity theory. Fundamentally, a complex system is defined as 'one that emerges from the interactions of its components', which can be agents or elements (Larsen-Freeman and Cameron 2008: 200). The theory emphasizes the dynamic and complex nature of any process or system, which can be affected by a multitude of factors in ways that may be difficult to predict. As a theory, it suggests that a learner cannot meaningfully be separated from their context and that in fact, it is more appropriate to view 'the learner and a complex context as interacting, co-adaptive dynamic systems' (ibid.: 205). It recognizes the uniqueness of every individual learner as a complex dynamic system whose abilities are continually evolving as the learner engages and interacts with various contexts and other systems. It is an approach that inherently rejects reductionist, single variable explanations of cause and effect, such as the concept of a single generic innate talent being solely responsible for language learning success. As a theory, it recognizes the potential for

continual change and development in learners' abilities as they interact in multiple, potentially unique ways with their various language learning and use contexts. Given the discussion in the preceding sections, it would seem to offer a more realistically grounded approach to attempting to explain and understand the complex process of an individual learning a language and it would appear to support a growth mindset, in which ability is perceived as a dynamic potential.

## Implications for language learning and teaching

This article does not intend to propose that everybody can become highly proficient polyglots; however, the trends and developments in contemporary thinking outlined above do suggest the validity and appropriacy of advocating a growth mindset about language learning abilities. As has been shown, abilities are now conceived of as being much more dynamic, varied, and multidimensional than can be represented by a single unitary form of general overall intelligence or aptitude. A picture emerges in which an individual's ability as a language learner is not conceived of as a fixed, quantifiable amount given at birth, but rather as a complex, ongoing process of multiple developable skills. Although there is recognition of the potential for individuals to differ in terms of their natural predispositions, the overwhelming trend is to also accept the capacity of every learner to 'grow' and develop their abilities, possibly beyond their expectations, given the right context, environmental support, and a personal willingness to invest time and effort and engage in repeated practice.

In order to promote a growth mindset, educators need to develop a positive learning culture, which engenders the beliefs underlying such a mindset. As teachers, we should begin by ensuring that we ourselves truly hold a growth mindset and believe in the capacity of all of our learners to continually develop and further expand their language learning abilities. We have to become aware of our own deeply held beliefs and be conscious of our classroom behaviours such as how we formulate feedback and our use of praise. These should highlight effort and progress and avoid implying that success is the result of a person's natural talent or a so-called 'gift' for languages. (cf. Dweck 2006). Care also needs to be taken in selecting materials which may contain implicit messages about language learning abilities and aptitudes. It can also be beneficial to hold an explicit discussion about mindset beliefs and their implications for learning behaviours in classrooms among learners and teachers. Indeed, such a discussion is also necessary in the influential contexts of teacher training, curriculum development, and textbook writing.

As teachers, we must be in a position to help our language learners to develop a growth mindset about their own abilities. If they do not believe in their own potential to improve, advance, and develop as linguists, then no matter how engaging, motivating, or pedagogically sound our materials and classroom procedures are, we may fail to reach and motivate all our learners. Our message, conveyed through our own behaviours, materials, and practices, needs to be that a talent for languages is not an immutable, fixed, innate entity that only a privileged few possess, but it is rather a complex, ongoing process composed of multiple abilities that every single learner can further develop and extend given a nurturing environment and their own

inner passion and drive. Our job as educators is to foster a language learning culture that can engender a growth mindset and motivate every single one of our learners to become the best linguist they possibly can.

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## Note

**1** The use of the term 'affordance' is intended to highlight the interaction between an individual and the perceived resources and characteristics of a context that offer potential opportunities for learning and growth. For a detailed discussion of the concept of 'affordances', see Chapter 4 of van Lier 2004, *The Ecology and Semiotics of Language Learning*. Dordrecht: Kluwer Academic Publishers.

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