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Relationship between bilingualism and Alzheimer's

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Palabras clave
bilingualism, Alzheimer's, symptoms, hippocampus, cerebral cortex, cognitive

Abstract
This paper compiles several studies that show the relationship between bilingualism and Alzheimer's disease. Studies here compiled were independently carried out between 1991 and 2012 in the United States, in Canada, in the United Kingdom, in India and in Sweden. The paper reviews the results of studies that show that the time elapsed between early Alzheimer's diagnosis and the actual appearance of telltale symptom is up to five years longer in elderly bilinguals than in elderly monolinguals. Cradle bilinguals benefit most from bilingualism but language learning in adulthood can also benefits speakers. These and related scientific facts are compiled. Reports of scientific research are presented, and its conclusions are summarized.

Palabras clave
bilingüismo, Alzheimer's, síntomas, hipocampo, corteza cerebral, cognitivo

Resumen
Este paper recompila estudios que muestran la relación existente entre el bilingüismo y el mal de Alzheimer. Los estudios se realizaron independientemente entre 1991 y 2012 en Estados Unidos, en el Canadá, en el Reino Unido, en la India y en Suecia. El paper revisa los resultados de estos estudios que muestran que el tiempo que transcurre entre el diagnóstico precoz de Alzheimer's y la presentación de los primeros síntomas es hasta cinco años más demorado en ancianos bilingües que en ancianos monolingües. Quienes más se benefician del bilingüismo son los que han sido bilingües desde la cuna pero también se ha demostrado que se benefician los hablantes que aprenden idiomas en la adultez. Tanto estos como otros hechos científicos relacionados se presentan y se resumen sus conclusiones.

Introduction

The purpose of this paper is to present information about recent scientific discoveries concerning the relationship that has been found to exist between bilingualism and Alzheimer's disease. Research independently done in several countries, confirms the effect that bilingualism has on elderly brains. An experiment carried out at the Swedish Armed Forces Interpreter Academy found that changes of the cerebral structure were not limited to those who had acquired bilingualism in early childhood a.k.a. cradle bilinguals, but also appeared following intensive adulthood study. In the experiment, young Army recruits were made to learn a new language at a very fast pace. Learners worked for many hours a day, with no Sundays or holidays off. Their work was so intense that they mastered a new language and were practically native-like in only thirteen months. The young recruits' brains were measured before and after the intensive language training, and it was discovered that the benefits of bilingualism are not only evident in the elderly, but also in subjects in their early twenties.

Elderly people are now a higher percentage of the population of every country because average age has increased considerably in recent years; birth control has caused a dramatic birthrate drop, while people live longer thanks to the advances of modern medicine, the prevalence of healthy life styles and regular health screenings (Ruse, 2013). Couples have fewer children because marriage is postponed; when couples do marry, women usually work and postpone pregnancy (Cancian & Reed, 2008). These factors combine to cause population aging. As the average age of populations increases, so does the incidence of age-related diseases, such as dementias and certain cancers (Chappell & Cooke, n.d.). The *baby boomer generation*, born after World War II, between the years 1946 and 1964 makes up a substantial portion of the Noh American population. Baby boomers are now between fifty and seventy; this causes the average age of the population to increase substantially and brings a tidal wave of people who, by the nature of their age are at risk of Alzheimer's, certain cancers and other age-related diseases. Post-mortem brain dissections of elderly bilinguals often show that although they actually had underlying neuropathologies, they somehow showed no symptoms of the disease and they were able to lead perfectly normal lives. Even when such extreme benefits of bilingualism do not appear, bilingualism has been shown to delay symptom onset. This phenomenon has merited a great deal of scholarly attention (Hakuta, 1990) and extensive research. There is considerable literature on bilingualism and on delayed onset of memory and reasoning loss and other symptoms such s anger outbursts, aggression, restlessness and sleep disruption. Some patients have been described as having unfounded suspicions about their families and other worsening psychological changes (Janse, ADAMS, & Swain, 2002); abundant information is available not only in scientific and medical journals, but also in the daily press and in magazines (Reinberg, 2013).

Methodology and data gathering

This article rests on descriptive studies that document the effect of bilingualism on the onset of the telltale symptoms of Alzheimer's. Since the main purpose of the study is to promote the understanding of the astounding relationship that exists between bilingualism and Alzheimer´s, reports of investigations that concern research done in the United States, in Canada, in the United Kingdom, in India and in Sweden were studied and summarized. In six of these investigations, participants were elderly and, in one, they were young Army volunteers in their twenties.

Theoretical framework

Dementias and Alzheimer's disease

Although there is still a great deal that we do not know about Alzheimer's, we do know that it is an age-related, neuro-degenerative disorder characterized by the decline of cognitive functions, difficulty competing familiar tasks, or withdrawal from work and social life. Patients may pass a mirror and think there is someone else in the room.

Alzheimer's disease accounts for 60 to 80 percent of all dementias (Karch & Goate, 2014). German psychiatrist Alois Alzheimer and Emil Krapelin were the first to describe the disease in 1906 (Maya, n.d.), but their findings were largely ignored by physicians for years. So completely were Dr. Alzheimer´s findings forgotten by physicians that, nearly 40 years later, famed movie actress Rita Hayworth's struggle with Alzheimer's, when she was in her forties, was persistently misdiagnosed as alcoholism. It was only when Ronald Reagan showed symptoms of the disease while still in the White House that Alzheimer's widespread frequency began to be recognized and millions were assigned for research.

It is a known fact that dementias are among the worst human illnesses but they are not actually a disease. The name is an umbrella word that describes loss of memory and reasoning as well as other mental conditions. Memory loss can often be a normal part of aging and not related to Alzheimer's but, in patients who have the disease, it is severe enough to affect daily life (Mayeux, 2007). Everyone dreads dementias because so little is still known about them, in spite of the considerable research that they are the subject of (Maya, n.d.). Science now knows that they are caused by structural and chemical changes in the brain that lead to cell necrosis and, ultimately, to the patient's death. Life expectancy in was a great deal shorter that it is now; elderly people were a small percentage of populations; advanced age was uncommon and, as a result, Alzheimer's was rare; as populations age, it has become prevalent in the late twentieth century and early twenty first (Alzheimer's Australia, n.d.). As we all know, modern medicine has increased life expectancy. In 1900, global average lifespan was just 31 years and below 50 years in even the richest countries. In 2010 it was 79 for whites and 75 for blacks. This has brought a tidal wave of elderly people who are subject to age-related ills (Gupta & Warner, 2008). Aging often entails Alzheimer's as well as other dementias and decrements in physical and cognitive functions. In 2010, the estimated number of world-wide patients was 35.6 million (ADMX, 2013) according to Alzheimer's Disease International (ADI), as many as three-fourths of the people worldwide who have Alzheimer's disease or other dementias have not