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Cognitive preservation and conference interpreting

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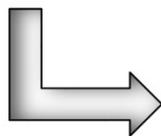
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Context

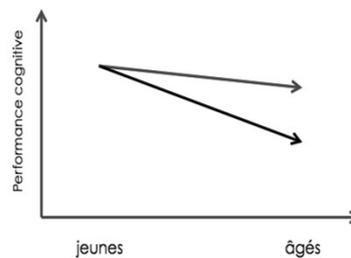
- Aging population
- Decline of working memory, speed information processing, and executive functions
- Study on the effect of cognitive activities (use it or lose it) (Marquié, 1997 ;

Salthouse, 1990).

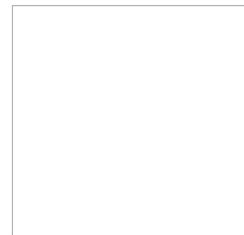
Differential preservation hypothesis



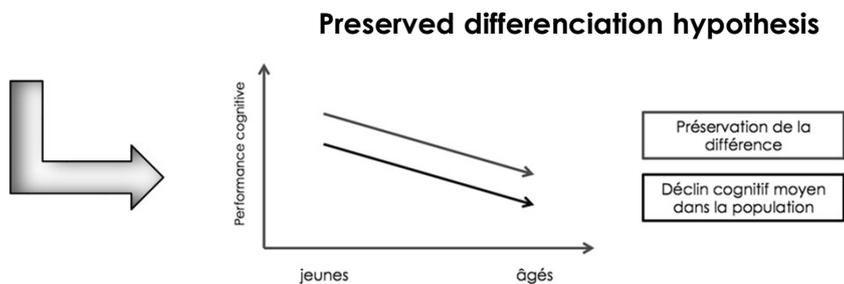
Regular and intensive use of cognitive functions can slow the cognitive decline



Context



- Study on working and leisure activities (Charness, 1981 ; Clarkson-Smith et Hartley, 1990 ; Ghisletta, Bickel, & Lövdé, 2006 ; Jopp et Hertzog, 2007 ; Masanuga et Horn, 2000, 2001 ; Meinz, 2000 ; Meinz et Salthouse, 1998 ; Salthouse, 2006).
- Results show that a higher level of cognitive stimulation is associated with better cognitive performance but the cognitive decline is not slowed.

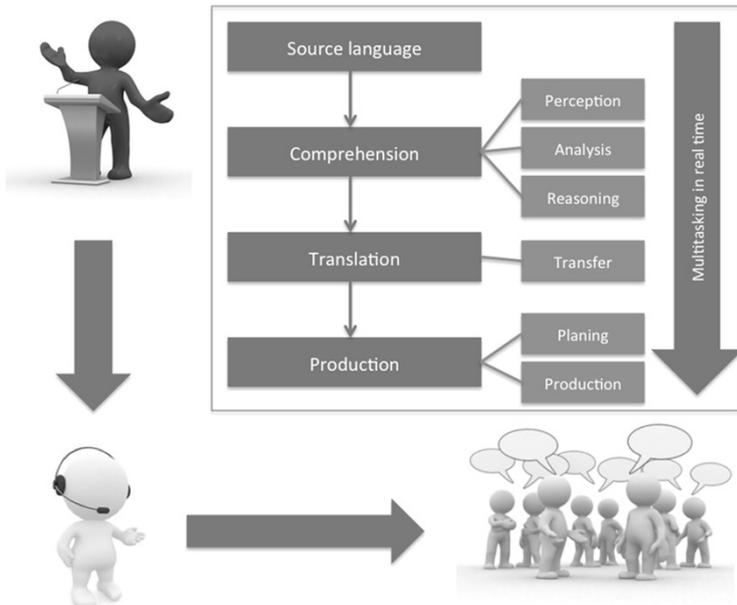


Bilingualism



- In recent years, studies on the effects of bilingualism have shown that the use of multiple languages could delay or slow the decline of cognitive functions (Bialystok, Craik, & Freedman, 2007 ; Craik, Bialystok, & Freedman, 2010 ; Gold, Johnson, & Powell, 2013 ; Luk, Bialystok, Craik, & Grady, 2011).
- ➔ Slowing of cognitive decline in tasks assessing cognitive flexibility and inhibition (Bialystok, 2008 ; Bialystok et al., 2008 ; Bialystok, Craik & Freedman, 2007 ; Bialystok, Craik, & Ryan, 2006 ; Costa et al., 2008 ; Prior & MacWhinney, 2010).
- These results are consistent with the hypothesis of differential preservation. The bilingualism can slow or delay the cognitive decline.

Simultaneous interpreting

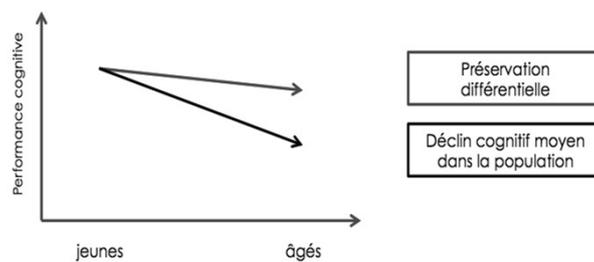


Several studies have shown that the performance of conference interpreters are higher in the manipulation of information, cognitive flexibility, the allocation of attentional resources and working memory compared to bilingual and monolingual (Bajo et al., 2000 ; Christoffels, de Groot, & Kroll, 2006 ; Lee, 2011; Padilla et al., 1995 ; Padilla et al., 2005 ; Signorelli et al., 2011 ; Stravrakaki et al., 2012 ; Tzou et al., 2011 ; Yudes et al., 2011).

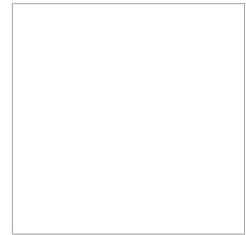
But nothing about speed of information processing or multitasking ?

Hypothesis

- H1: Age does not have the same effect on people in different professions
- H2: Among conference interpreters, there is no relationship between age and performance.



Methodology



- **Participants**

- 30 interpreters, 30 translators et 30 monolingual aged 25 to 65 years. The 3 groups were comparable for age and education.

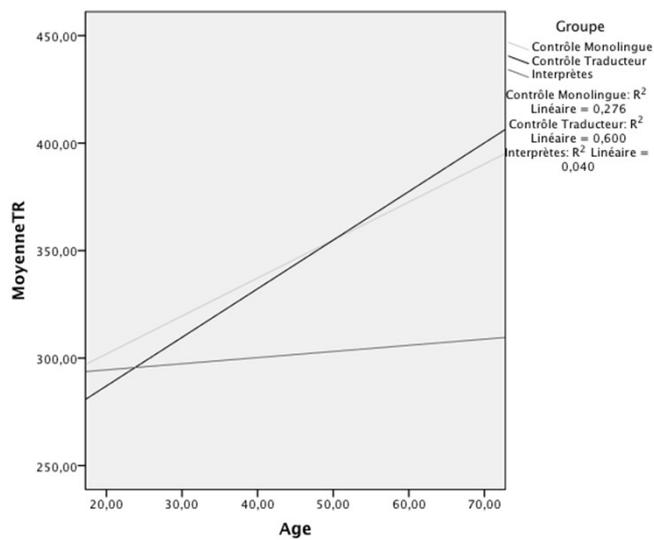
- **Material**

- Reaction time with E-Prime 2.0® .
- A Computer-based Brown Peterson (dual task).

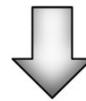
- **Analysis**

- MANCOVA
- CORRELATIONS

Results

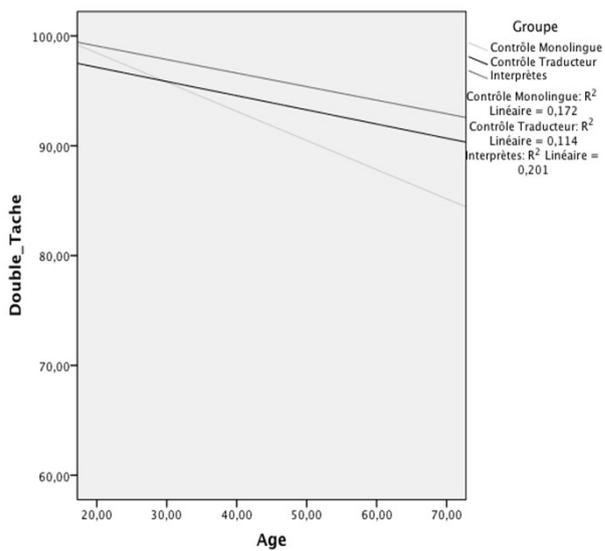


The MANCOVA shows that the age does not have the same effect on the speed of information processing when we are interpreters, translators or monolingual (age*groupes; $p = .004$)

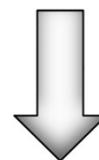


The correlations between age and performance are not significant in the group of interpreters ($r = .201$; $p = .286$) but are significant in the group of translator ($r = .774$; $p = .001$) and monolingual ($r = .526$; $p = .003$).

Results



The MANCOVA shows that the age has the same effect on the dual task (age*groupe; $p = .362$)



The age has an effect on performance ($p = .001$)
The group does not have an effect on performance ($p = .684$)

Discussion

- H1 : Age does not have the same effect on people in different professions
 - Validated in reaction time
 - Not validated in dual task
- H2 : Among conference interpreters, there is no relationship between age and performance
 - Validated in reaction time
 - Not validated in dual task
- In conclusion, it appears that the interpretation of conference can modulated the effects of age on speed of information processing.

Perspectives

- Currently, the 3 groups are composed of 60 participants + 3 groups of 15 retired
- We have investigated the executive functions (Updating, Inhibition and Flexibility)
- We have investigated the cognitive stimulation outside work

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Thank you for your
attention

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