

Outline: Research Paper

Research Question: Effect of Bilingualism on Creativity

TOPICS TO DISCUSS

-WORKING MEMORY

**-Bilingual Minds** *Ellen Bialystok, Fergus I.M. Craik, David W. Green and Tamar H. Gollan*

**-The benefits of being bilingual: Working memory in bilingual Turkish–Dutch children** *Elma Blom, Aylin C. Küntay, Marielle Messer, Josje Verhagen, Paul Leseman*

**-A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism** *Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

-EARLY STUDIES (Bilingualism has negative impact)

**-A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism** *Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

**-Some Thoughts Concerning Bilingual Education Programs** *G. R. Tucker and Alison d'Anglejan*

**-Thought and Two Languages: The Impact of Bilingualism on Cognitive Development** *Rafael M. Diaz*

**-A Comparison of Second Language Learners and Monolinguals on Divergent Thinking Tasks at the Elementary School Level** *Richard G. Landry*

-VERBAL VS. NON VERBAL TASK

**-Bilingualism and Creativity** *John F. Jacobs*

**-Bilingual verbal and nonverbal creative behavior** *Anatoliy Kharkhurin*

**-Bilingual Minds** *Ellen Bialystok, Fergus I.M. Craik, David W. Green and Tamar H. Gollan*

-DIVERGENT THINKING (Maybe split into two categories)

**-Bilingualism and creativity: benefits in convergent thinking come with losses in divergent thinking** *Bernhard Hommel, Lorenza S. Colzato, Rico Fischer and Ingrid K.*

**-A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism** *Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

**-Thought and Two Languages: The Impact of Bilingualism on Cognitive Development** *Rafael M. Diaz*

**-A Comparison of Second Language Learners and Monolinguals on Divergent Thinking Tasks at the Elementary School Level** *Richard G. Landry*

**-Role of Code-switching in Bilingual Creativity** *Anatoliy Kharkhurin and Li Wei*

**-Can speaking more languages enhance your creativity? Relationship between bilingualism and creative potential among Korean American students with multicultural link** *Hangeun Lee, Kyung Hee Kim*

## **OUTLINE**

### **Introductory Paragraph - Bilingualism and Creativity**

- Introduce Bilingualism
  - What is Bilingualism
- Introduce Creativity and the diff. Topics
- Maybe some stats → Percentage of bilingual people → Growth over the years
- Short history of thoughts of bilingualism
- Thesis:

### **First Paragraph: Early Research and its negative attitude towards bilingualism**

Introduce With:

- Intro to early history and its attitude towards bilingualism
- Examples of research that is against bilingualism and its education
- Common thoughts
  - Some Thoughts Concerning Bilingual Education Programs** *G. R. Tucker and Alison d'Anglejan*

Added Supported:

- Early research on bilingualism warned that bilingualism could be deleterio learning. These early studies concluded that monolingual students outperform bilingual students on a range of cognitive tasks
- A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism** *Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

### **Second Paragraph: Early Research should be neglected and Research Improvement**

Introduce With:

- Early research cannot be concluded as it is highly flawed
- Some Thoughts Concerning Bilingual Education Programs** *G. R. Tucker and Alison d'Anglejan*

Statement/Rebuttal: Why is it flawed

- There are many factors when considering bilingual individuals
  - Degree of bilingualism
  - Degree of difference between the two languages
  - Age when learning a second language
  - Method of learning the second language.
  - Attitudes toward the second language.

**-Thought and Two Languages: The Impact of Bilingualism on Cognitive Development** *Rafael M. Diaz*

Evidence/Example:

- Duration of Research: Exposure and experience to the second language is needed -- > 5 years
- 3 years show no improvement
- A Comparison of Second Language Learners and Monolinguals on Divergent Thinking Tasks at the Elementary School Level** *Richard G. Landry*

**Third Paragraph: Verbal Vs. Non-Verbal Cognitive Task**

Introduce With:

- Another reason is the fact that most early research use verbal communication as a way to measure creativity levels

Show why this research is legitimate: → This article considers degree of bilingualism

- However, newer studies show that non-verbal creativity is much better for bilinguals
  - Bilingual children exhibit better divergent thinking
  - Uses vs. Words Test
    - Word - Given words → as many meanings as possible
    - Uses - Given objects → as many uses as possible
    - Significant scores in the Uses test.
- Bilingualism and Creativity** *John F. Jacobs*

More Examples:

- Similarly, → EARLIER TESTS (1900s)
  - Lower scores at Boston Naming Test
  - 60 Black-and-white line test
  - slower responses/ vocabulary deficit - less frequency of use of specific words
- Bilingual Minds** *Ellen Bialystok, Fergus I.M. Craik, David W. Green and Tamar H. Gollan*

More Examples:

- The study investigates whether bilingualism has a measurable contribution to verbal and nonverbal creative performance.
  - The performance of Russian—English bilingual and English monolingual college students residing in the USA was compared on the verbal and nonverbal indicators of the Abbreviated Torrance Test for Adults.
  - The results demonstrated a bilingual advantage in nonverbal creativity and a monolingual advantage in verbal creativity.

**-Bilingual verbal and nonverbal creative behavior** *Anatoliy Kharkhurin*

**Fourth Paragraph: Working Memory**

Introduce With: Floating Hypothesis

-Working Memory: the need to manage two languages concurrently could place greater demands on working memory. This hypothesis suggests that bilingualism may impede efficient processing of information in working memory because of the cognitive load imposed on working memory

**-A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism** *Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

Example - Rebuttal of Hypothesis:

- Bilingual benefits are found beyond inhibition in working memory tasks.
  - Bilingualism enhances working memory in sequential bilingual children from low SES backgrounds
  - Bilingual benefits are found in language-independent working memory tasks that involve both storage and processing
  - Higher bilingual proficiency is associated with better verbal working memory performance.

**-The benefits of being bilingual: Working memory in bilingual Turkish–Dutch children** *Elma Blom, Aylin C. Küntay, Marielle Messer, Josje Verhagen, Paul Leseman*

Additional Benefits:

-Suggests that the executive control advantage may even mitigate cognitive decline in older age and contribute to cognitive reserve, which in turn may postpone Alzheimer's disease.

**-Bilingual Minds** *Ellen Bialystok, Fergus I.M. Craik, David W. Green and Tamar H. Gollan*

**Fifth Paragraph: Divergent Thinking**

Introduce: Theory behind Divergent thinking and bilingual

- Divergent thinking: ability to generate ideas from something
- Torrance Test
- bilinguals typically acquire experience in switching from one language possibly trying to solve a problem while thinking in one language, and then, switching to the other. This habit, if it were developed, could help them in their tests requiring symbolic reorganization since they demand a readiness to drop on concept and try a new one

Follow-Up with: Connecting with Working Memory and Verbal/Non Verbal Tasks

- that bilingual children are thinking verbally while performing nonverbal tasks,
- that bilinguals switch from one language to the other while performing these tasks

-that bilinguals' habit of switching languages while performing tasks stimulates the ability to more readily discard doubtful hypotheses and formulate new ones to find a correct solution.

**-Thought and Two Languages: The Impact of Bilingualism on Cognitive Development** *Rafael M. Diaz*

Example:

-Divergent thinking abilities, such as fluency, flexibility, and originality, were the potential behaviors involved in this study because they are characterized by adaptability and willingness to change.

-Such a situation would enable the student to develop possible neglected potentialities.

-By the third grade, however, children learning a second language showed significant advantages on all measures of the Torrance test. Stretching the notion of cognitive flexibility a bit too far, Lan concluded that the flexibility produced by learning a second language conducive to both divergent thinking and originality.

**-A Comparison of Second Language Learners and Monolinguals on Divergent Thinking Tasks at the Elementary School Level** *Richard G. Landry*

-This study examined the relationship between individuals' creativity and their degree of bilingualism, which is reflective of multicultural experiences.

-A total of 116 Korean American students (49 boys & 65 girls) participated in this study.

-The Word Association Test (Lambert, 1956) and Subject Self Rating (Peal & Lambert, 1962) were used to measure participants' bilingualism, and the Torrance Tests of Creative Thinking (Torrance, 2008) was used to measure their creative potential.

-The results indicated that individuals' degree of bilingualism and creativity are positively correlated, regardless of gender or age.

**-Can speaking more languages enhance your creativity? Relationship between bilingualism and creative potential among Korean American students with multicultural link** *Hangeun Lee, Kyung Hee Kim*

**Sixth Paragraph: Argument against Divergent Thinking and Counter Args**

Introduce With:

-Low-Proficient vs High-Proficient bilingualism

**-Bilingualism and creativity: benefits in convergent thinking come with losses in divergent thinking** *Bernhard Hommel, Lorenza S. Colzato, Rico Fischer and Ingrid K. Christoffels*

Rebuttal With

-The Article itself is flawed (report wise)

-Only 42 People

- Low Proficient - Not fluent - German English
- High Proficient - Dutch (well schooled)

-What this article refuses to mention is the fact that they use verbal tasks which we have already shown that monolinguals are better, as such not as good article

-slower responses/ vocabulary deficit - less frequency of use of specific words

**-Bilingual Minds** *Ellen Bialystok, Fergus I.M. Craik, David W. Green and Tamar H. Gollan*

Rebuttal With:

-Bilinguals have shown enhanced skills with respect to creative and divergent thinking and to abstract and symbolic reasoning. In an investigation on creativity and bilingualism, Ricciardelli (1992) found that bilinguals outperform monolinguals in 20 of the 24 studies reviewed, showing a clear positive relationship between bilingualism and creativity or divergent thinking.

**-A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism** *Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

### **Conclusion**

-Early Research is inconclusive but we have learned a lot from them

-After considering these factors, it seems like bilingualism has positive correlation with

-Working Memory

-Non-Verbal Tasks

-Creative (Divergent) Thinking

-There are however current research that is against this but is ineffective

-Conclude Thesis → connect to real world applications (like education programs)

## **SUMMARY OF ARTICLES**

**Bilingualism and creativity: benefits in convergent thinking come with losses in divergent thinking** *Bernhard Hommel, Lorenza S. Colzato, Rico Fischer and Ingrid K. Christoffels*

Two types of thinking

- Convergent thinking: ability to put stuff together
- Divergent thinking: ability to generate ideas from something

Low-Proficient vs High-Proficient bilingualism

**Bilingualism and Creativity** *John F. Jacobs*

- Bilingual children exhibit better divergent thinking
- Better non-verbal than verbal
- This article considers degree of bilingualism
- Uses vs. Words Test
  - Word - Given words → as many meanings as possible
  - Uses - Given objects → as many uses as possible

Significant scores in the Uses test.

**Bilingual verbal and nonverbal creative behavior** *Anatoliy Kharkhurin*

- The study investigates whether bilingualism has a measurable contribution to verbal and nonverbal creative performance.
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**A Systematic Review and Meta-Analysis of the Cognitive Correlates of Bilingualism**

*Olusola O. Adesope, Tracy Lavin and Terri Thompson, Charles Ungerle*

- Early research on bilingualism warned that bilingualism could be deleterio learning. These early studies concluded that monolingual students outperform bilingual students on a range of cognitive tasks

-Working Memory: the need to manage two languages concurrently could place greater demands on working memory. This hypothesis suggests that bilingualism may impede efficient processing of information in working memory because of the cognitive load imposed on working memory

-Bilinguals have shown enhanced skills with respect to creative and divergent thinking and to abstract and symbolic reasoning. In an investigation on creativity and bilingualism, Ricciardelli (1992) found that bilinguals outperform monolinguals in 20 of the 24 studies reviewed, showing a clear positive relationship between bilingualism and creativity or divergent thinking.

### **Some Thoughts Concerning Bilingual Education Programs** *G. R. Tucker and Alison d'Anglejan*

-Early research cannot be concluded as it is highly flawed

-Early Concerns include

- (1) Children who are instructed bilingually from an early age will suffer cognitive or intelligence retardation in comparison with their monolingually instructed counterparts.
- (2) They will not achieve the same level of content mastery as their monolingually instructed counterparts.
- (3) They will not achieve acceptable native language or target language skills.
- (4) The majority will become anomic individuals without affiliation to either ethnolinguistic group. (as cited in Cummins & Gulutsan, 1974)

### **Thought and Two Languages: The Impact of Bilingualism on Cognitive Development** *Rafael M. Diaz*

-There are many factors when considering bilingual individuals

- Degree of bilingualism
- Degree of difference between the two languages
- Age when learning a second language
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- Attitudes toward the second language.

-The second hypothesis is that bilinguals may have developed more flexibility.

- bilinguals typically acquire experience in switching from one language possibly trying to solve a problem while thinking in one language, and then, switching to the other. This habit, if it were developed, could help them in their tests requiring symbolic reorganization since they demand a readiness to drop on concept and try a new one
- that bilingual children are thinking verbally while performing nonverbal tasks,
- that bilinguals switch from one language to the other while performing these tasks, and
- that bilinguals' habit of switching languages while performing tasks stimulates the ability to more readily discard doubtful hypotheses and formulate new ones to find a correct solution.

### **A Comparison of Second Language Learners and Monolinguals on Divergent Thinking Tasks at the Elementary School Level** *Richard G. Landry*

-Exposure and experience to the second language is needed -- > 5 years



-Divergent thinking abilities, such as fluency, flexibility, and originality, were the potential behaviors involved in this study because they are characterized by adaptability and willingness to change.

-Such a situation would enable the student to develop possible neglected potentialities.

-By the third grade, however, children learning a second language showed significant advantages on all measures of the Torrance test. Stretching the notion of cognitive flexibility a bit too far, Lan concluded that the flexibility produced by learning a second language conducive to both divergent thinking and originality.

### **Role of Code-switching in Bilingual Creativity** *Anatoliy Kharkhurin and Li Wei*

-Investigates whether code-switching practice has an impact on **creativity**

-One hundred and fifty-seven multilingual college students completed a code-switching attitudes and behaviors questionnaire, which served to select habitual and non-habitual code-switchers.

-Habitual code-switchers demonstrated greater innovative capacity than their non-habitual counterparts.

-However same creativity selective attention

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