Symposium ‘Twee Talen, één beTalen’

Program

Nuria Sebastian  
**Babelians in the crib**

Antonella Sorace  
**Bilingualism: an investment for life**

Lunch program  
- "**KlinkerMikken**" by Jos Pacilly and Jurriaan Witteman  
- Flash talks:  
  - **Sharing the brain: How your mothertongue shapes your second language** by Lesya Ganushchak  
  - **The production unit across languages** by Rinus Verdonschot  
  - **Your second language is never quiet** by Kalinka Timmer

Aafke Hulk  
**Factors of failure and success in the acquisition of Dutch HET by bilingual children**

Leonie Cornips  
**Multilingualism, identities and acquisition of standard Dutch by dialect peaking children**

Karen Emmorey  
**What happens when your other language is a sign language?**

Serge Rombouts  
Kamerlingh Onnes and **MRI research**

Henri Lenferink, Mayor of Leiden  
**Official opening of the new LIBC MRI-scanner**

Bernhard Hommel
"Babelians in the crib"

Nuria Sebastian
University Pompeu Fabra, Barcelona

Studies of preverbal infants exposed to a bilingual environment have unveiled the existence of important similarities, but also significant differences in the way monolinguals-to-be and bilinguals-to-be solve the problem of language acquisition. In this talk I will review the evidence that shows how very young babies can differentiate the languages of their environment, how they learn the sounds of their languages and how they learn the very first words. These studies provide important clues of the nature of the successful solutions bilingual babies develop to learn two languages and to become a competent adult bilingual speaker.
Babelians in the crib

Núria Sebastián-Gallés
Universitat Pompeu Fabra

Three basic landmarks

1. Language discrimination
2. Learning words
3. Cognitive abilities

Language differentiation

- Prerequisite \(\iff\) To realize there are two languages
- How long does it take a (bilingual) baby to realize that there are more than one language in the environment?

Language differentiation

- At birth newborn infants can differentiate some language pairs, but not others:
  - English vs. French
  - French vs. Japanese
  - Japanese vs. English
  - Italian vs. Spanish
  - English vs. Dutch

They cannot differentiate Spanish from Catalan (A. Christophe - unpubl. data)
Bilingual from birth?

Tested on language discrimination and preference

Byers-Heinlein et al. 2010

Conclusion... and question

• Monolingual English infants prefer the native language
• Bilingual English/Tagalog infants show equivalent interest in both of their native languages
• Have they really learned something about each of their languages? Or do they just treat all languages the same?

….. are they really bilingual?

• Two languages? Or language confusion?
• < prenatal exposure to each language than monolingual has to one
• Can they discriminate?

Discrimination

Monolingual and bilingual infants showed discrimination

English and Tagalog can be distinguished from birth

What about infants exposed to bilingual input from languages not distinguishable from birth? (such as Dutch & English or Catalan & Spanish)
Romance languages (in Europe)

Habituation/Familiarization Procedure

4.5 month olds

Language Differentiation

Four and a half month-old bilingual infants:
Do not have difficulties in separating Spanish from Catalan (like monolingual infants)

Language Differentiation

• Orientation latencies procedure: Infants orient faster to familiar than to unfamiliar stimuli

Language Differentiation

but...

Bosch & Sebastián-Gallés, 2001

Bosch & Sebastián-Gallés, 1997
... they are not fully equivalent

Four and a half month-old bilingual infants:
– Do not have difficulties in separating Spanish from Catalan (like monolingual infants)
– Are marginally better than monolingual infants at distinguishing “similar” languages (Italian):

<table>
<thead>
<tr>
<th>Language Combination</th>
<th>Monol</th>
<th>Biling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish-English</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Spanish-Italian</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Spanish-Catalan</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Visual language differentiation

Monolingual and Bilingual French-English infants

<table>
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<tr>
<th>Age</th>
<th>Monol</th>
<th>Biling</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 month olds</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>8 month olds</td>
<td>✗</td>
<td>✔</td>
</tr>
</tbody>
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Visual language differentiation

Monolingual and Bilingual Spanish-Catalan bilingual infants

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<td>✗</td>
<td>✔</td>
</tr>
</tbody>
</table>

Conclusion

Language differentiation

• Bilingual infants show similar language differentiation abilities than their monolingual peers

• But not fully equivalent. They show slightly increased discrimination capacities (both with auditory and visual language discrimination)

http://infantstudies.psych.ubc.ca/research/publications/visual_lang_disc

Weikum et al 2007

Sebastián Gallés, under review
The bilingual-to-be:
Lessons to be learned

Three basic landmarks

1. Language discrimination
2. Learning words
3. Cognitive abilities

Learning the name of objects

Bih-Dih:

Monolingual infants fail to do this task at 14 months, but they succeed at 17-24 months. Although, they can distinguish the difference between /bih/ and /dih/

Learning the name of objects

<table>
<thead>
<tr>
<th></th>
<th>Monolingual</th>
<th>Bilingual</th>
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</thead>
<tbody>
<tr>
<td>14 months</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>17 months</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Stager & Werker, 1997 & Fennell et al. 2007

Word representation

Young babies and toddlers are sensitive to slight mispronunciations

Mira, ¡un *pirro!

Word representation

<table>
<thead>
<tr>
<th></th>
<th>Catalan</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>/peʃ/ *peʃ/</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>/peθ/ *peθ/</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>

Ramon-Casas et al. 2009
Word representation

Catalan infants /peʃ/ * /peʃ/

Spanish infants /peθ/ * /peθ/

Bilingual infants /peʃ/ * /peʃ/ /peθ/ * /piθ/

Are bilinguals delayed in language learning?

Bilingual infants lack sensitivity to discrimination at older ages (2.8-4.3 years)

Sometimes bilingual infants fail where monolingual infants succeed:

They seem to be less sensitive to subtle differences in the sounds of the words

Are they delayed in word learning?

What if (similar+uncommon) contrasts are not "relevant" to capture bilingual infants' attention?

Are bilingual infants delayed in language learning?

- What if bilingual infants are "cool guys"?
- They are adopting a different (optimal) strategy
- Differences are perceived (and encoded), but experiments designed to test monolingual infants are not appropriate

Word learning

Stimuli were linguistically "neutral": "good" for French and English natives

⇒ No "language cues"
Providing linguistic cues

Mattock, Polka, Rvachew and Krehm [2010]

/bos/ and /gos/ with clear French or English VOT values

Bilinguals’ performance matched monolinguals’ performance when the stimuli were not linguistically neutral.

Mutual exclusivity

18 month olds:
Monolingual, bilingual & trilingual

Monolingual: >> unknown object
Bilingual: > unknown object
Trilingual: ~ unknown object

Byers-Heinlein and Werker (2009)

Word representation

In our study we used cognates:

- llet – leche
- abελα> abexa
- peβ- peθ
- gaλη> gaλeta

In multilingual homes, one of the parents (at least), mispronounces some words. Cat-Sp: e & ε

Word representation

In our study we used cognates:

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Study using non-cognates:

- Gos-Perro
- Ànec-Pato...

Bilinguals differentiate!

Are bilinguals delayed in language learning?

Bilingual infants keep pace with their monolingual peers.

They show equivalent language development abilities when appropriately tested

But learning two languages is more work than learning just one...

The bilingual-to-be: Lessons to be learned

Three basic landmarks

1. Language discrimination
2. Learning words
3. Cognitive abilities
Embedded Figures Test (Byalistok 1992), children

Focus on necessary information and ignore misleading information

Dimensional change card sort task
Changes between 3 & 5 years
Byalistok, 1988, 1992

Bialystok & Martin 2004

5 year olds: monolingual English, bilingual Chinese-English

M=B

5 year olds:

M=B

M=B

M=B

Babies

7-month olds
Monolingual: Italian
Bilingual: Italian-Slovenian

Kovacs & Mehler 2009

Results experiment 2: [le][le][mo]

Kovacs & Mehler 2009

Results experiment 3: ● ● ▲
Q&A
Are bilingual infants delayed in the learning of their two languages?
Are they following the same path as their monolingual peers?

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Additional information
• Infant research laboratory at the Universitat Pompeu Fabra (Barcelona):
  bebes.upf.edu

• Infant research laboratory at the University of British Columbia (Vancouver, CA):
  http://infantstudies.psych.ubc.ca/
“Bilingualism: an investment for life”

Antonella Sorace
University of Edinburgh

Research has shown that bilingualism (broadly intended as fluency in more than one language) brings a range of linguistic and cognitive benefits that go far beyond knowledge of two languages and extend to the whole lifespan. Both child and adult bilinguals have enhanced spontaneous understanding of language structure, more effective selective attention, and improved mental flexibility. However, bilingualism often continues to be regarded through the distorting lens of misinformation and misconception. Focusing on people who learn two languages at different ages – from bilingual children to adult advanced second language speakers - I will illustrate the most common myths about bilingualism and how they are contradicted by research. I will then discuss the importance of disseminating information about how the bilingual brain works.
**Bilingualism: an investment for life**

Antonella Sorace  
University of Edinburgh & Bilingualism Matters  
antonella@ling.ed.ac.uk  

Symposium “Twee Talen – één BeTalen”  
Leiden, 20 May 2011

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**Bilingualism = a lot more than two languages**

- Bilingual = someone who is fluent in more than one language and uses both languages on a regular basis.
- Knowing more than one language changes the brain in a significant way.
- Raising children bilingual = investing on better brains!
- The *Bilingualism Matters* experience

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**Some common myths about child bilingualism**

- "BILINGUALISM CAUSES DELAYS IN THE CHILD’S COGNITIVE DEVELOPMENT"
- "BILINGUALISM LEADS TO LANGUAGE CONFUSION"
- "BILINGUALISM IS USEFUL ONLY IF BOTH LANGUAGES ARE WIDELY SPOKEN!"

There are no foundations to these ideas!
- Bilingualism IN ANY LANGUAGES gives children many linguistic benefits and some specific non-linguistic advantages that improve how they think and act in everyday situations.

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**How does the child’s brain work?**

- Children can acquire any language without any ‘effort’, just like learning to walk.
- The child’s brain is NOT “naturally monolingual”: it can deal with two (or even more) languages.

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**Do bilingual children separate their two languages?**

- Bilingual children can distinguish between their two languages from the very beginning of their lives.
- Bilingual children follow a similar sequence of stages and milestones in each of the two languages as monolingual children.

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**Very early separation of the two languages**

- Very young bilingual babies can distinguish the sounds of the two languages they have been exposed to.
- They do this even when the two languages are very similar - e.g. Spanish and Catalan.

(Bosch & Sebastian-Galles 2001)
Do bilingual children mix their languages?

- Children generally don’t mix their languages (but they can do so deliberately and for fun!)
- Language mixing – when it occurs - is usually not a sign of linguistic confusion:
  - adult bilinguals do it too
  - mixing is not random: it has a “grammar”
  - children mix when they speak with other bilinguals, not when they speak to monolinguals.

Spontaneous knowledge about language

- Bilingual children ‘notice’ how language works.
- Having two different language systems makes the structure of language more salient and draws the child’s attention to its features (sounds, words, sentences).
- Because of their implicit understanding of language, bilingual children find it easier to pick up other languages.

Words

- For example, bilingual children have two words for the same object (e.g. melo and apple for 🍎) and can distinguish between forms and meanings.
- They understand the conventional relationship between objects in the real world and their labels.
- They find it easier to learn relations among words, i.e. accept that the same object can be both a DOG and an ANIMAL.

Separating form and meaning

- Bilingual children are the same as monolinguals at saying that this sentence is ‘said in the wrong way’:
  The monkey eated a banana
- Bilingual children are better than monolinguals at saying that this sentence is ‘said in the right way’:
  A banana ate the monkey

Reading advantages

- Bilingualism affects some key background components to literacy.
- Bilingual children tend to be more precocious readers.
- Reading skills transfer across (similar) languages.

Stability of print

Preschool bilingual children realise sooner than monolinguals that a word doesn’t change meaning if it appears next to the ‘wrong’ object.
• Bilingual children find it easier to identify and recognize the sounds of the spoken language.
• Bilingual children acquiring alphabetic languages have an earlier understanding of the correspondence between letters and sounds.
• E.g. Which is the longest word? 

**TRAIN**  **CATERPILLAR**

**Letter-sound correspondences**

**Bilingualism = a lot more than two languages**

• **Summary of linguistic advantages:**
  – early awareness of sounds, words, sentences
  – enhanced language learning abilities
  – earlier reading and transfer of reading skills

**Attention and ‘executive control’**

Bilinguals tend to be better than monolinguals at:

• selective attention on specific features while ignoring other salient but misleading features
• switching between tasks that require attention to different instructions
• monitoring their behaviour during an activity

These differences persist throughout life: they are found both in bilingual children and in adults who learned another language in childhood or adolescence.

**Awareness of the other: an example**

• Test: “Bugs Bunny puts his chocolate in a cupboard and then leaves the room; while he’s away Daffy Duck comes in, takes Bugs Bunny’s chocolate and puts it on top of the fridge. Where will Bugs Bunny look for the chocolate when he comes back to the room?”
  • Three-year-old bilingual children are more likely to give the correct answer (‘in the cupboard’) than their monolingual peers.

(Kovács 2009)

**Examples: task switching**

• Switching between tasks:
  Task A: sorting objects by shape
  ![Task A images]
  Task B: sorting objects by colour:
  ![Task B images]
  • Bilingual children are faster than monolinguals to adapt to Task B.
Bilingual babies have this advantage too!

- Babies hear a made-up word and see a face appear on the left of the screen.
- After a while both the word and the position of the face change.
- 7-month old bilingual babies are faster than monolinguals at adapting to the new condition.

Kovács & Mehler 2009

What is involved in this advantage?

- Paying sustained attention to the task
- Focusing on one dimension
- Ignoring the other dimension
- Switching to the new condition and updating the mental set

Why these advantages?

- Bilinguals face a problem that is logically irrelevant for monolinguals: they have to select the right language and avoid interference from the other language.

Why these advantages?

- The two languages of bilinguals are always active.
- Bilinguals have to ‘filter out’ one language when they speak the other.
- They have massive practice of using a control mechanism that allows them to limit interference between their languages.
- The same mechanism may be used in other activities that require controlled attention and inhibition of irrelevant factors.

It doesn’t matter which languages

- Since the advantages of bilingualism are related to the switching from one language to the other, and inhibiting one language when the other one is spoken, they should happen regardless of WHICH languages bilingual children learn.
- This is another good reason for keeping active all minority languages and for encouraging early exposure to a second language in children.

Potential longer-term advantages

- Some new studies suggest that bilingualism may offer some protection against the deterioration of cognitive abilities in old age.
- The more languages were spoken in life, the better cognitive functions are maintained.
- Bilinguals develop dementia up to 4 years later.
- We plan to study the mental abilities of elderly bilingual speakers of Gaelic and English in the Western Isles.

*Bialystok, Craik, Klein & Viswanathan 2004*
What is involved?

- Are bilinguals better at inhibiting irrelevant information or at focusing on relevant information?
- These are two sides of the same coin.
- How can we test whether being bilingual brings better inhibitory control?

A prediction

- If bilinguals are advantaged in terms of inhibitory control,
- then bilinguals can be predicted to be more affected than monolinguals by negative priming.

What is negative priming?

- A slower response to a stimulus that has just been inhibited.

An example

- Name the colour of the ink for each word, not what the word is saying
- List B should slow you down more than List A

A spatial example

Press the button on the side where X appears
Pay attention to X and ignore O
then X appears where O was

This is what we found

- 29 monolinguals and 29 bilinguals, balanced for age, gender, education, and socioeconomic background.
- Bilinguals show stronger negative priming effects than monolinguals.

(Treccani, Argyri, Sorace & Della Sala 2009)
Bilingualism = a lot more than two languages

• Summary of cognitive advantages:
  – Enhanced ‘awareness of the other’
  – Mental benefits:
    • selective attention
    • task switching
    • monitoring behaviour

Bilingualism in adulthood: cognitive effects

• 38 students aged 19 to 31.
  • 19 monolinguals aged 19 to 24, and 19 late bilinguals aged 19 to 31.
  • All bilinguals had started learning a second language after age 14.
  • In the TEA test, the bilingual advantage is obtained only in sub-test 2 (inhibition) but not in sub-test 3 (switching).

The earlier the better, but...

• The best ‘window of opportunity’ for becoming fully bilingual is early childhood.
  • But the good news is that....

Child second language learners

• .....exposure to another language in the primary school years is more likely to lead to bilingualism than in late adolescent/adult years.

• Many studies (including our own research) have found that child second language learners can also benefit from the cognitive advantages of bilingualism.

(Bak et al. 2010)

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The Test of Everyday Attention

• Three tests from the TEA (Roberton et al 1994):
  • 1: count the tones (sustained attention)
  • 2: count only the high tones but not the low tones (selective attention and inhibition)
  • 3: count up if you hear a high tone, reverse the direction of counting if you hear a low tone (switching and monitoring)

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Bilingualism in late childhood and adolescence: cognitive effects

• 60 students aged 19-34 years: 19 monolinguals and 41 bilinguals.
  • Bilinguals had acquired a second language before the age of 3 (n=22) or between the ages of 4 and 15 (n=19).
  • Three tests of auditory attention of increasing complexity from Test of Everyday Attention (TEA, Robertson et al, 1994)
  • No significant differences between early and late bilinguals

(Bak, Everington, Garvin & Sorace 2008)

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Some bilingual children are 'late talkers', but they are still within normal bounds.

Bilingual children have two vocabularies: all other things being equal, the size of vocabulary in each language is smaller than in monolinguals (although the global size of their mental vocabulary in the two languages may be in fact larger).

Access to words tends to be slower.

Most research on bilingual children is based on case studies of individual young children.

In recent project, we looked for the first time at a large cohort of OLDER bilingual children (6-10 year olds) and we compared them with their monolingual peers.

Disadvantages of bilingualism?

Older bilingual and monolingual children make similar errors

Monolingual and bilingual children do not differ substantially in their linguistic behaviour: they tend to make the same developmental mistakes.

Many of the errors bilinguals make are due to the process of handling two languages and not to incomplete or inadequate knowledge of the languages.

Structures that require the coordination of different sources of information – for example grammatical choice and context - are the most likely to show variation.

BUT: mastery of these structures is also late in monolingual children!

Monolingual and bilingual children do not differ substantially in their linguistic behaviour: they tend to make the same developmental mistakes.

Many of the errors bilinguals make are due to the process of handling two languages and not to incomplete or inadequate knowledge of the languages.

BUT: mastery of these structures is also late in monolingual children!

Subject pronouns can be omitted when they refer to an entity that is clear in context:

Maria non c'è, è andata a casa

"Maria isn't here, she went home"

They cannot be omitted in other cases, for example when two entities are contrasted to one another:

Maria e Yuri non si capiscono: lei parla l'italiano, lui no.

"Maria and Yuri don't understand each other: she speaks Italian, he doesn't"
A coordination (not a grammar) problem

Bilinguals may not always have enough resources to coordinate grammar and context because they have to inhibit the unwanted language.

Bilinguals may not always have enough resources to integrate contextual information over time.

This depends on proficiency in the active language, proficiency in the inactive language, and type of situation.

Controlling two languages has some cost

Raising a child bilingual: What’s the best time?

Many parents in bilingual families think that it is better to wait to introduce one of the languages until the other one is ‘well established’.

But this deprives the child of language input in the most crucial years.

It is more difficult to introduce the other language later on and for the parents to use a ‘new’ language around the house.

Being committed to bilingualism: planning, opportunities, motivation

Bilingual children need to hear enough of both languages.

This takes some effort and consistency in the family.

Patterns of bilingual input

One parent – one language

Minority language at home, majority language outside the home

Majority language at home, minority language at nursery/school

Any of these will work if it provides enough input in both languages!

How children perceive the minority language is important

Children are very sensitive to people’s attitudes towards language: they know whether a language is considered ‘unimportant’.

Children need to realise that

– both languages and cultures are valued by the family and the community.
– both languages can be used in all situations and are spoken by many people outside the family.
Monolingualism: is it curable?

ATTITUDES TOWARDS LANGUAGE LEARNING NEED TO CHANGE

INFORMATION IS CRUCIAL

A Scottish Initiative: Bilingualism Matters

- Co-ordinated & administered by the Knowledge Transfer Office of the University of Edinburgh.
- Awarded funding from the UK Economic and Social Research Council.
- Sustained by the European Community through “Piccolingo”, a new initiative aimed to raise awareness of the importance of early second language learning.

Areas of activity

- Language learning exposure in the preschool and primary school years
- Maintenance of home languages in immigrant children
- Maintenance of regional minority languages

Bilingualism Matters: what does it provide?

- A website containing:
  - FAQs (translated into 14 languages)
  - Local resources
  - Current events: talks, workshops, etc.
  - General audience references (books, articles and web-based resources)
- Email replies to requests for advice and information.
- Talks in the community
- Seminars and workshops for the private sector and for international companies and organisations.

Progress

- Bilingualism Matters is rapidly expanding outside Scotland and the UK.
- It is reaching more and more parents, teachers, health professionals, policy makers.
- We are opening branches in Norway, the Western Isles, Greece, and we hope soon in Italy.
- This success shows that there is wide scope for work that bridges the gap between research on bilingualism and society.

Website and contacts

We welcome feedback and suggestions:

http://www.bilingualism-matters.org.uk/
info@bilingualism-matters.org.uk
antonella@ling.ed.ac.uk

THANK YOU!


We kunnen klinkers ook maken op bestelling. Dat gaat met spraaksynthese. Nu is de cirkel rond. We kunnen een klinker maken met iedere willekeurige kleur door een plek aan te wijzen op de landkaart, en we kunnen proberen deze klinker te imiteren, en de gemeten plek van die imitatie op de landkaart intekenen. Aan de afstand tussen de plaats van het voorbeeld en die van de imitatie zien we dan hoe goed de imitatie was. Zit de imitatie dicht bij het doel, dan is het een goede imitatie (en horen we geen verschil met het voorbeeld), zit hij er een eind vanaf, dan is de imitatie slecht. Dit noemen we visuele feedback van de prestatie. Van zulke feedbacksystemen willen we gebruik maken in het onderwijs in de uitspraak van vreemde talen, en van het Nederlands voor buitenlanders.

Figuur 2. De twaalf Nederlandse zuivere klinkers ingetekend in een landkaart gedefinieerd door resonantiefrequentie van keel (F1) en van mond (F2): van links naar rechts en van boven naar beneden ie, uu, oe, ee, i, eu, u, oo, o, e, a, aa.
**De wetenschap achter KlinkerMikken**

**Buitenlands accent**
Kleine potjes hebben grote oren. Jonge kinderen kunnen heel goed verschillen horen tussen spraakklanken die voor volwassenen allemaal hetzelfde klinken. Als we eenmaal onze moedertaal geleerd hebben, zijn we ongevoelig geworden voor kleine klinkerverschillen. Dat is lastig als we er op latere leeftijd (na de pubertijd) een taal bij willen leren. We horen dan niet goed het verschil tussen onze eigen Nederlandse *oe* in *voel* en de twee verschillende *oe*-klanken in de Engelse woorden *full* en *fool*. Volwassen Nederlanders horen ook niet goed het verschil tussen de klinkers in de Engelse woorden *bed* en *bad*, die voor ons beide klinken als *bed*. Omdat we de verschillen tussen de klinkers in de vreemde taal niet scherp horen, kunnen we die klinkers ook niet uitspreken zoals het hoort. Daardoor spreken we de vreemde taal met een Nederlands accent (bv. steenkoolengels) en zijn we niet altijd goed verstaanbaar. Dat overkomt niet alleen Nederlanders die een vreemde taal spreken, maar natuurlijk ook buitenlanders die Nederlands moeten leren.

**Articulatie van klinkers**
Klinkers, de belangrijkste geluiddragende elementen in de taal, verschillen van elkaar in kleur en in duur. Een klinker korter of langer aanhouden is niet zo moeilijk, maar hoe maken we de verschillende kleuren? Bepalend voor de kleur van een klinker is de vernauwingsplaats, dat is de plaats waar in onze mond of keel de tong het dichtst in de buurt komt van het gehemelte of keelwand. In figuur 1 staan over elkaar heen getekend acht tongcontouren overgetrokken van röntgenfoto's van de klinkers *ie*, *ee*, *e*, *aa*, *a*, *oo* en *oe*. In iedere contour is met een stip voor elke klinker de vernauwingsplaats aangegeven. We zien dat elke klinker een unieke eigen vernieuwingsplaats heeft. Bij die vernieuwing wordt het mondkeelkanaal (zo noemen we dat) verdeeld in een voorste en een achterste holte, ofwel de mondholte en de keelholte. Mond- en keelholte hebben geen vaste afmetingen maar worden korter of langer afhankelijk van waar de vernieuwingsplaats zit.

**Akoestiek**
Hoe groter – en vooral langer - een holte des te lager zijn resonantiefrequentie. Elke klinker die uit onze mond komt heeft een unieke klankkleur die wordt bepaald door de resonantiefrequentie van de keelholte (F1) en van de mondholte (F2). Die resonantiefrequenties (of formanten, vandaar: F1 en F2) kunnen we meten in een geluidsspectrogram. We tekenen vervolgens een landkaart waarin de F1 van boven naar beneden loopt (van 200 naar 800 Hertz) en de F2 van rechts naar links (van 600 tot 2400 Hertz) en plaatsen daarin elke klinker op de plek die wordt bepaald door zijn gemeten F1 en F2. We krijgen dan Figuur 2.
Why is *HET* so difficult to learn?
Factors of failure and success in the acquisition of Dutch *HET* by bilingual children.

Aafke Hulk (NIAS/UvA)

Many bilingual children in the Netherlands have problems with the Dutch definite determiner *HET*. Instead of saying *HET huis* (‘the house’) they say *DE huis*. But they hardly ever make the error in the other direction, i.e. they do not say *HET fiets* (‘the bike’) instead of *DE fiets*, contrary to adults learning Dutch who make both types of errors. In this talk, I will present a number of factors which have been argued to play a role in the acquisition process of bilingual children. We will try to find out whether they may contribute to explain the difficulty these children have with *HET*.

Some of these factors are well known, such as the age of onset of acquisition: in general adults do worse than children. But within the group of child learners, is there a difference between bilingual children who acquire Dutch from birth and those who start a few years later? Similarly, factors such as the quantity and quality of the input in Dutch these children get, will be considered in more detail, and other more socio-linguistic factors. Moreover, we will raise questions such as: is *HET* easier for children whose other language also has different forms of definite determiners, such as French or German, contrary to English? Finally, also the linguistic properties of *HET* will be shown to possibly play a role: for example, *HET* is not only a definite determiner, it is also a pronoun, as in *ik zie HET* (‘I see it’) where it can refer the word such as *HET huis*, but also to a whole sentence such as *ik ben moe* (‘I am tired’). Does this play a role and if so, in what way?

In all respects, the data from bilingual children will be compared to those of their monolingual Dutch peers.
Factors of failure and success in the acquisition of Dutch *HET* by bilingual children

Aafke Hulk
NIAS/University of Amsterdam

Factors of success

Illustration of the possible role of such factors in a case-study of one linguistic phenomenon in bilingual Dutch: the definite article *het*

Why?
Prinses Maxima zei het al: “Lidwoorden zijn een van de moeilijkste dingen om te leren in het Nederlands”.

Dutch *het*

• Is the definite article to be used with certain nouns, i.e. nouns that have neuter grammatical gender

  *het* boek  ‘*the book*’
  *het* hondje  ‘*the doggie*’

Grammatical gender in Dutch definite determiners

<table>
<thead>
<tr>
<th>Gender</th>
<th>Indefinite</th>
<th>Definite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td><em>een</em></td>
<td><em>de</em></td>
</tr>
<tr>
<td>Neuter</td>
<td><em>een</em></td>
<td><em>het</em></td>
</tr>
</tbody>
</table>

Common gender: *de* *muis* ‘*the mouse*’
Neuter gender:  *het* *huis* ‘*the house*’

Bilingual children have problems with *het* as definite determiner

they use *de* instead of *het*, they say

* *de* *huis* instead of *het* *huis* (‘*house*’)
* *de* *hondje* instead of *het* *hondje* (‘*little doggie*’)

[but they do not use *het* instead of *de*]

Where do we find bilingual children in the Netherlands?

• Bi-dialectal communities
  (see next talk by Cornips)
• Ethnic minority communities
  Turkish, Morrocan, Surinam, Antillian …
• “Expat” bilingual families
  English, French, Japanese …
How do we find out whether they correctly use HET?

- Spontaneous speech recordings

⇒ Elicited production data:
the researcher plays a sort of game with each child individually to make him/her say *het* or *de*

### Picture description task

**Determiner produced with neuter nouns**

**bilingual children from ethnic communities**

<table>
<thead>
<tr>
<th>Age</th>
<th>Article</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:0 – 3:10</td>
<td><em>de</em></td>
<td>32/42</td>
</tr>
<tr>
<td></td>
<td><em>het</em></td>
<td>10/42</td>
</tr>
<tr>
<td>5:0 – 5:2</td>
<td><em>de</em></td>
<td>15/22</td>
</tr>
<tr>
<td></td>
<td><em>het</em></td>
<td>7/22</td>
</tr>
<tr>
<td>9:3 – 10:5</td>
<td><em>de</em></td>
<td>17/30</td>
</tr>
<tr>
<td></td>
<td><em>het</em></td>
<td>13/30</td>
</tr>
</tbody>
</table>

### Will they ever use *het* target like?

Even at age 10, these children still use *de* instead of *het* in more than 50% ⇒ hopeless??

First question to be asked: **what about monolingual Dutch children?**

### Monolingual acquisition of the definite determiner DE and HET

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td>17</td>
<td>15</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Article</td>
<td>100%</td>
<td>98%</td>
<td>86%</td>
<td>82%</td>
<td>93%</td>
</tr>
<tr>
<td></td>
<td>33/33</td>
<td>96/98</td>
<td>76/86</td>
<td>84/103</td>
<td>111/119</td>
</tr>
<tr>
<td></td>
<td>12%</td>
<td>44%</td>
<td>69%</td>
<td>71%</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>5/42</td>
<td>39/93</td>
<td>69/87</td>
<td>77/108</td>
<td>93/122</td>
</tr>
</tbody>
</table>

**Monolingual acquisition of the definite determiner between 3 and 8 years old - Experimental production data cf. Blom et al. 2008**

**differences HET and DE**

- *DE* is target like from the start
- overgeneralization of *DE* until a (very) advanced age,
- *HET* comes in optionally and late and is not target like yet at age 6 in monolingual children
- Initially, no overgeneralization of *HET* to common nouns

**VERY DIFFERENT FROM OTHER LANGUAGES**
Monolingual Dutch children have also problems with *het*:
- they overgeneralize *de*
- it takes a longtime before they use *het* target like

Bilingual vs monolingual children
Bilingual children seem to have more/longer problems with *het* than monolingual children

**HOW COME?**

Many factors may play a role
- Age of onset of acquisition
- Quantity of the input
- Quality of the input
- Socio-economic situation
- Role of the other language
- Linguistic phenomenon
  etc

Age of onset of acquisition
- Does it make a difference at what age you start to learn your 2nd language?
- Is there a critical age after which you will never become target like?

Children versus adults

Age effects in L2 acquisition
- Critical Period ending at …
  - age 5 (Krashen 1973)
  - age 7 (Johnson & Newport 1989; DeKeyser 2000)
  - age 8 (Bialystok & Miller 1999)
  - age 9 (Penfield & Roberts 1959)
  - puberty (age 12-13) (Lennéberg 1967)
  - age 15 (Long 1990)

The early child bilingualism project: acquiring gender in Dutch and Greek
Sharon Unsworth¹,², Froso Argyri³, Leonie Cornips¹, Aafke Hulk⁴, Antonella Sorace³ & Ianthi Tsimpli²
Meertens Institute¹ / Utrecht University² / University of Edinburgh³ University of Amsterdam⁴ / Aristotle University of Thessaloniki⁵

http://ecb.childbilingualism.org
Early child bilingualism: Definitions adopted here

2L1 children
Early successive bilinguals
L2 children

Dutch-English bilingual children

- Common > neuter for all groups; more variability for neuter
- Group effect for neuter nouns: 2L1 = early successive bilinguals \( \neq \) L2 children

Age of onset of acquisition

There seems to be an age of onset effect in the data of these English-Dutch children, but

- other research has shown that children learn the L2 faster when they are older
- what about possible interaction with other factors?

L1 vs. 2L1
(data for L1 3 and 7 year olds from Blom et al. 2008)

What does it mean, being bilingual?

1 bilingual \( \neq \) ½ monolingual, but in each of both languages, a bilingual child gets less input than his monolingual peers

Quantity of the input

- Traditional measure: age at time of testing minus age of onset
- New measure (cumulative) Total amount of exposure to NL in years over time based on questionnaire information
Language input questionnaire
• Parental questionnaire
• Input quantity
  – who spends how much time with child and % NL spoken
  – language use at daycare, school and out-of-school care
  – extra-curricular (reading, clubs, TV, computers, friends)
  – now and in the past

Dutch: Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Age of onset</th>
<th>Age at testing</th>
<th>Length of exposure (traditional)</th>
<th>Length of exposure (cumulative)</th>
<th>In exposure to NL</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 children</td>
<td>84</td>
<td>4.0 - 10.6</td>
<td>5.7 - 15.4</td>
<td>8.6 - 62.2</td>
<td>8.6 - 62.2</td>
<td>8.0 - 50.4</td>
</tr>
<tr>
<td>Dutch-English bilingual children</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Matched on LoE, the age effect between ESB and cL2 children disappears!

The L2 children “catch up” with the others when they have got a similar amount of input

Dutch-English bilingual children
Matching on LoE (cumulative)

• No signf. difference between groups for common
  \((U = 49.00, z = -.70, p > .05)\) or neuter
  \((U = 50.50, z = -1.12, p > .05)\)

Quality of the input

Does the child get non-native Dutch input (at home)?

(grand)parents, care takers who themselves are adult L2 speakers of Dutch make errors => incorrect, non-native input

Why is it important to speak Dutch to a bilingual child even if you are non-native?

Usual answers:
⇒ Children’s acquisition of Dutch
⇒ (later) success in school

BUT
Canadian research

Canadian research has shown that
• Input from non-proficient speakers does little to enhance the children’s language acquisition
• Early exposure to the majority language in the preschool years might not be highly important for ensuring success in the early years of elementary school

Quality of the input

Is there enough richness and diversity in the input?

different activities, contexts, interlocutors etc

Socio-economic situation

Differences in maternal education have been found to particularly influence the acquisition of vocabulary

Importance given to reading to and by the child…

Socio-economic situation

Attitudes towards language (education) and bilingualism may differ

But also other socio-linguistic factors may play a role:
Peer group effect – identity markers
(cf next talk)

The role of the other language

Is there cross-linguistic influence?

Do we see that the acquisition of a certain phenomenon in one language is influenced by the presence/absence of a similar phenomenon in the other language?

Positive => acceleration
Negative => delay, errors

The role of the other language in adult L2 learners

Cf “transfer” of the L1, a well known phenomenon in adult L2 learners, who, for example, use the word order of their L1 in their L2, as in

*Morgen ik ga naar Parijs
‘Tomorrow, I go to Paris’
*instead of
Morgen ga ik naar Parijs
The role of the other language in bilingual children

Could the delay in the acquisition of *het* in Dutch-English bilingual children be due to cross-linguistic influence from English to Dutch?

i.e. could the use of *DE* (instead of *HET*) be reinforced due to

(i) phonological similarity *the-de*,
(ii) (ii) English has just one form

The role of the other language in bilingual children

What if the other language also has definite determiners expressing grammatical gender?

Kupisch looking at German in Italian/German bilingual children:

the acquisition of gender in German is accelerated through simultaneous exposure to Italian, but only in balanced bilinguals

The role of the other language in bilingual children

(Hulk & vd Linden 2009 Elicitation data small number of children)

*Dutch – French 2L1 children*

• acceleration in Dutch
• within monolingual range in French

*Dutch - Spanish 2L1 children*

• delay in Spanish
• within monolingual range Dutch

The role of the other language in bilingual children

Cross-linguistic influence in the acquisition of HET is possible if there is

**A very high degree of morpho-syntactic overlap** between the two languages

(cf Cornips & Hulk for Dutch 2L1 children with a dialectal background; Sabourin for Dutch aL2 with a German vs an English background)

The role of the other language in bilingual children

Cornips & Hulk found no cross-linguistic influence in the bilingual children from ethnic minorities they studied

Possible explanation: no overlap in determiner system between these languages and Dutch

The linguistic phenomenon

Are other linguistic phenomena also hard to learn in bilingual (and monolingual) Dutch?

No, not necessarily

What makes Dutch HET so special?
The linguistic phenomenon

Is it its *neuter gender*?

**NO**

In Greek, which has a three gender system – masculine, feminine and neuter – neuter is the easiest and earliest to be acquired!

What makes Dutch HET so special from a linguistic point of view?

As definite determiner, HET is much less frequent than DE:
- only 25% of all Dutch nouns take HET
- All plural nouns take DE

=> Initially children start using DE as (only) definite determiner which does not yet mark grammatical gender

What makes Dutch HET so special from a linguistic point of view?

• HET is ambiguous: it is also a pronoun, as in
  *Ik weet het* ‘I know it’
  *Het regent* ‘it rains’

and as such, it has different properties

=> Children get confusing input

What makes Dutch HET so special from a linguistic point of view?

• There is hardly any evidence for categorizing Dutch nouns according to grammatical gender, contrary to what we see e.g. in Spanish or Greek

=> Initially children are not aware of the fact that DE and HET form a paradigm marking the grammatical gender of the noun

Concluding remarks about factors of success

Both the quantity and the quality of the input are highly relevant to determining success of child bilingual acquisition of HET

Age of onset appears to be less important

The linguistic properties of HET and the presence/absence of these in the other language may also play a role

Thank you!
Leonie Cornips, Meertens Instituut

Multilingualism, identities and acquisition of standard Dutch by dialect speaking children

In the first part of this talk, I will discuss why societies as The Netherlands consider themselves traditionally as a ‘monolingual’ society despite the fact that bilingualism and multilingualism has always existed within its borders. I will reflect that this monolingual bias is linked to the rise of The Netherlands as a modern nation state by which the idea of one nation-one language nation has become inextricably intertwined. The result is the myth that in modern European societies there are more or less fixed links between speaking one language – standard Dutch - and a national (Dutch) identity sharing a more or less stable set of norms and values, cultural and linguistic.

The second part discusses a case study of bilingual children growing up with two languages, namely standard Dutch and a Limburg dialect. In general, it is assumed that dialect-speaking children will experience language problems when acquiring standard Dutch. The phenomenon to be discussed is grammatical gender of the common and neuter definite article *de* and *het* as in *de vogel* ‘the bird’ and *het boek* ‘the book’, respectively. It takes monolingual Dutch speaking children about seven years to acquire the adult use of *de* and *het*. In view of the ‘assumed’ language problems by dialect speaking children, it is very surprising that this case study shows that they acquire the correct use of these articles at a younger age. I’ll give some explanations why monolingual Dutch children experience so many and why Limburg dialect children experience hardly any problems in the acquisition of *de* and *het*. 
Multilingualism, identities and acquisition of standard Dutch by dialect speaking children

“Two languages, get one for free”
The Leiden Institute for Brain and Cognition (LIBC)
Leonie Cornips
Meertens Instituut (KNAW)
20 May 2011

“Two Languages, get one for free”
Organization of the talk

• Historical perspective on mono/multilingualism – reflection
• Societal perspective on mono/multilingualism – reflection
• Acquisition of grammatical gender in Dutch by bilingual dialect children: de boom ‘the tree’ versus het huis ‘the house’

Historical perspective–reflection
“The Netherlands is a monolingual nation”

BUT:
• Medieval times and Renaissance: French and Latin as languages of science, church, literature (Latin), French as language of the Civil Service and court
• 19th century - dialect, French
• form 20th century onwards – increasing individual bilingualism dialect-Dutch, French-Dutch (beginnings 20th century) (van der Sijs)

Societal perspective on bilingualism – reflection

Why do we experience a bi- and/or multilingual society as problematic?

The use of a standard language i.e. Dutch in The Netherlands has a very important symbolic value (as elsewhere in Europe)
Societal perspective on bilingualism – reflection

Three common opinions

• Speakers are only able to acquire or to use one language as a monolingual speaker
  Thus, there is only one language that can be used/spoken properly

thus: Dutch as a second language is deviant and/or different from Dutch as a first language

Societal perspective on bilingualism – reflection

• Speakers always speak only one language in every context

thus: if people speak other kind of Dutch as in youth language for example, this is the only way they (are able to) speak

Societal perspective on bilingualism – reflection

• Attitude: the way of speaking is connected to behaviour

Thus: improper/deviant Dutch reflects improper/deviant social behaviour

The way of speaking is connected to social behaviour

TEACHER: 42 years old in 'het Parool' (December 24, 1997)


“Their way of talking is also connected to specific behavior. Me asking: have you done your homework Mustafa? Says he, mind you while I’m looking at him: ‘who, me?’ Moroccans are seldom direct; they’re always trying to stall to try and keep (open) other possibilities to negotiate. They are real bargainers, yeah.”
The way of speaking is connected to social behaviour

JOURNALIST

‘Drie jongens van een jaar of 17 staan in de Amsterdamse metro. Een zwarte jongen, een Noord-Afrikaan en een blanke. Ze staan tegen elkaar op te scheppen, zoveel is duidelijk, al zijn ze nauwelijks te verstaan. Ze spreken een soort Nederlands, maar dan met een brij van onverstaanbare woorden er doorheen gehusseld. Nu en dan herhaalt een van de drie een duister woord een paar keer luidkeels: duidelijk is dat een van de anderen de gebruikte term dan niet kent.

Three youngsters of 17 years old sit in the Amsterdam metro. A black guy, a North-African and a white one. They are clearly boasting although one can hardly understand them. They speak some sort of Dutch but intermingled with a hodgepodge of incomprehensible words. Now and then one of them repeats a sinister word in a loud voice: it is clear that one of the others doesn’t know the word.


They are pushing and hitting each other on the back and their shoulders hit each other. Eventually, the three youngsters give a noisy and roudy impression. The effect is that all other passengers in the subway keep at a safe distance. By the looks of it, this is exactly the intention. Not only does their body language express ‘keep away from us’ but their incomprehensible language use sets them apart from the surrounding as well. These three Amsterdam youngsters talk street language or youth language.


Societal perspective on bilingualism – reflection

Where do these three thoughts/opinions/attitudes come from?

- Young people no longer able to speak ‘proper’ Dutch
- Erosion of ‘proper’, polite communicative behavior
Historical perspective on mono/multilingualism –reflection

1775: formation of modern nations in Europe
The ‘definition’ of a nation in that time?
“The language is the essence of the nation, it is the nation”
one nation – one language – one people – one flag – one anthem

(Leerssen 2006)

Societal perspective on mono/multilingualism –reflection

Nationalism is based among others on the assumption that territorially and socio-politically, the most natural and organic division of humankind into states runs along ‘national’ (cultural, LINGUISTIC, ethnic) lines, so that ideally there is a seamless overlap between the outlines of a state and of its constituent nation

Historical perspective on mono/multilingualism –reflection

1806 Wilhelm von Humboldt:
“Most of the circumstances that accompany the life of a nation (climate, religion, manners and customs) can be, as it were, separated from it, (...). But one aspect is of a wholly different order, and that is language. It is the breath, the very soul of the nation, appearing everywhere in tandem with it (...)”

Historical perspective on mono/multilingualism –reflection

19th century: language is more than a communication tool, it is the very substance of a nation’s identity. It determines how a nation articulates its presence in the world, it is the carrier that determines the outline of the nation’s moral existence; it may be called nation’s moral DNA, its ‘operating’ system.
Historical perspective on mono/multilingualism – reflection

1794: Grégoire’s (leading politician) report: “On the necessity and the means of destroying regional dialects and to render usage of standard French universal”. Standard French was the language of only 15 out of 83 departments; there were no less than 30 different regional languages in France; of 28 million inhabitants, only 3 million habitually used standard French as their everyday language, 6 million were ignorant of French and another 6 million spoke it with difficulty.

Societal perspective on mono/multilingualism – reflection

Symbolic value of the standard language:

Dutch as common language minimalizes internal differences (ethnic, social, regional) and maximalizes external differences (The Netherlands versus Germany, UK etc)
Societal perspective on mono/multilingualism – reflection

One nation – one language?
England-English, France-French, Germany-German
But:
• Belgium
• Norway
• Switzerland and Austria

Societal perspective on bi/multilingualism

The result of the 19th century is the myth that in modern European societies there are more or less fixed links between speaking one language – standard Dutch - and a national (Dutch) identity sharing a more or less stable set of norms and values, cultural and linguistic.

Societal perspective on bi/multilingualism

• There exists a-priori national, social, ethnic and regional ‘groups’
• There exists a relation between what is observed (language, appearance and behavior) and social identity (national, ethnic, regional and/or religious)

Societal perspective on multilingualism

But:

Connections between language and identity (national, ethnic) are not permanent and predictable; they vary in time and from one group to another

Referents of terms like Moroccan, Surinamese, Dutch, Limburger, British are not fixed but are context dependent, ambiguous, layered and negotiable
(socio)Political motivations:
The term ‘language’ is controversial. A language follows a ‘norm’ which is characterised by the following three features: (a) it is orientated to by speakers of more than one vernacular variety (which does not necessarily imply that it is mastered by everybody), (b) it is looked upon as an High (prestigious and formal)-variety and used for writing, and (c) it is subject to at least codification (grammars, dictionaries) and/or subsequent stages of elaborating the language, so that it can be used in a wide range of domains (education).

Mutual intelligibility? People speaking one ‘language’ can understand each other
• But people of different languages can understand each other: Norwegian and Danish
• Speakers of different varieties of one ‘language’ cannot understand each other: Flemish, Limburgish, thus ‘languages’ in this definition

Linguistic motivation?
Grammatical gender of definite determiner:
• Language A: 3-genders - masculine, feminine, neuter - German M der, F die, N das and Greek
• Language B: 2-genders - common and neuter b, for example Dutch C de and N het but Dutch dialects like Flemish, Brabant and Limburgish : 3-genders
Bilingual/dialectal child

Idea: a child who grows up in her local dialect always experiences a delay when acquiring standard Dutch

Pilot study of the bilingual acquisition of the definite determiners *het* and *de* in Dutch

Monolingual acquisition of the Dutch definite determiners *het* and *de*

Stages development Dutch determiners
(spontaneous data: Van Kampen & Wijnen 2000)

1. Nouns without a determiner
2. Schwa-like determiner (= indefinite *een ‘a’*) before age two
3. Common definite determiner *de ‘the’*
4. Overgeneralisation *de*, first appearance neuter definite determiner *het*
5. Adult system: not before age 6

Pilot study: Bilingual/dialectal child

Subjects: 31 children

• one group of bilingual children who speak the local dialect of Heerlen (c.q. a Limburgian dialect) in addition to standard Dutch
• one group of monolingual Dutch children as controls:

<table>
<thead>
<tr>
<th>age</th>
<th>bilingual</th>
<th>monolingual Dutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 3</td>
<td>n=1</td>
<td>n=4</td>
</tr>
<tr>
<td>3 - 4</td>
<td>n=3</td>
<td>n=7</td>
</tr>
<tr>
<td>4 - 5</td>
<td>n=4</td>
<td>n=6</td>
</tr>
<tr>
<td>5 - 7</td>
<td>n=6</td>
<td>n=0</td>
</tr>
<tr>
<td>total</td>
<td>n=14</td>
<td>n=17</td>
</tr>
</tbody>
</table>

Monolingual children acquiring *de* and *het* (*Blom et al. 2008:314*)

<table>
<thead>
<tr>
<th>age</th>
<th>#</th>
<th><em>het</em> instead of <em>de</em></th>
<th><em>de</em> instead of <em>het</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>3;2-3;10</td>
<td>7</td>
<td>0%</td>
<td>0/33</td>
</tr>
<tr>
<td>4 – 4;11</td>
<td>17</td>
<td>2%</td>
<td>2/98</td>
</tr>
<tr>
<td>5;1-5;11</td>
<td>15</td>
<td>14%</td>
<td>12/88</td>
</tr>
<tr>
<td>6;2-6;11</td>
<td>11</td>
<td>18%</td>
<td>19/103</td>
</tr>
<tr>
<td>7;1-7;10</td>
<td>14</td>
<td>7%</td>
<td>8/119</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37/42</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>54/93</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>27/87</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31/108</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29/122</td>
</tr>
</tbody>
</table>
### Bilingual/dialectal child

**Heerlen dialect**

<table>
<thead>
<tr>
<th>masc</th>
<th>fem</th>
<th>neuter</th>
</tr>
</thead>
<tbody>
<tr>
<td>indefinite ‘a’</td>
<td>inne</td>
<td>ing</td>
</tr>
<tr>
<td>definite ‘the’</td>
<td>d’r</td>
<td>de</td>
</tr>
</tbody>
</table>

**standard Dutch**

<table>
<thead>
<tr>
<th>common</th>
<th>neuter</th>
</tr>
</thead>
<tbody>
<tr>
<td>indefinite ‘a’</td>
<td>een</td>
</tr>
<tr>
<td>definite ‘the’</td>
<td>de</td>
</tr>
</tbody>
</table>

### Methodology experiment

(Zuckerman 2001)

**Experimenter:**

- Shows picture of a boy with a green flower:
  
  *Deze jongen tekent de groene bloem en dit meisje tekent ..*
  
  This boy draws the green flower and this girl draws

  - Experimenter shows picture of a girl with a yellow boat
  
  *...de gele boot...the yellow boat*

### Pilot study bidialectal child acquiring standard Dutch de and het

The first developmental phases:

1. Nouns without a determiner
2. Schwa-like determiner (= indefinite *een*), before age two
3. Common definite determiner *de*
**no determiner instead of DE**

![Graph showing no determiner instead of DE](image1)

**Correct use of DE**

![Graph showing correct use of DE](image2)

---

**no determiner instead of HET**

![Graph showing no determiner instead of HET](image3)

**Pilot study bidialectal child acquiring standard Dutch *de* and *het***

**Target stage: correct use of HET**

![Graph showing target stage: correct use of HET](image4)
The use of bare nouns when DE is required:
- monolingual children: significant developments between all age groups
- bilingual children: passed this stage by the age of 3-4

The correct use of DE:
- monolingual children: significant developments between all age groups
- bilingual children: already by age group between 3-4

Significant differences between monolinguals and bilinguals in the youngest age groups

The use of bare nouns when HET is required:
- monolingual children: significant developments between 3-4 and 4-5 years old
- bilingual children: passed this stage by the age of 3-4

The correct use of HET:
- monolingual children: correct use for only 10% when they are between 4 and 5 years old
- bilingual children: all groups show developmental stages; significant difference with monolinguals by the age of 4-5 years

Children speaking dialect as the other language are faster than monolingual children - Dialect accelerates!

How come?
- Dialect looks very similar to standard Dutch in determiners
- Dialect has three gender distinctions - masculine, feminine and neuter – standard Dutch only two
- More evidence for gender distinctions: indefinite determiner ‘a’ and possessive pronoun ‘his’
Conclusion

• There does not exist something like a-priori national, social, ethnic and regional ‘groups’
• Referents of terms like Dutch are not fixed but are context dependent, ambiguous, layered and negotiable.
• Connections between language and identity (national, ethnic) are not permanent and predictable; they vary in time and from one group to another.

References


Thank you!
Historical perspective on mono/multilingualism – reflection

Herder: a nation’s culture is seen as the manifestation of its true, fundamental identity, something that comes from below, from the lower classes, from folklore, rustic traditions and popular customs. Combined influence of Rousseau and Herder: each nation, categorically separate from others as a result of its cultural rootedness and authenticity, deserved its own separate sovereignty. -> modern nationalism in Europe Leerssen 2006
What happens when your other language is a sign language?

Learning a sign language from birth by growing up in a Deaf family or later in life as a second-language produces unique effects on visual-spatial abilities, co-speech gesture, and the brain. Bimodal bilinguals (people who are fluent in both a signed and a spoken language) out-perform monolingual speakers on mental rotation and face processing tasks, and this enhanced performance is thought to be tied to the processing demands of sign language (e.g., understanding spatial descriptions requires mental rotation and grammatical facial expressions are used to indicate syntactic structure). Our studies have also shown that learning a sign language, but not a spoken language, changes how you gesture when you speak. Finally, bimodal bilinguals exhibit differences in neural activity when perceiving facial expressions and when producing spatial descriptions compared to monolingual speakers.
What happens when your other language is a sign language?

Karen Emmorey
San Diego State University

If you are a deaf child
– learning a sign language is easier than learning a spoken language
– learning a sign language does NOT delay or interfere with learning a spoken

Bimodal bilingualism

Unimodal bilinguals: Two spoken languages

One linguistic output channel: Vocal articulation
One linguistic input channel: Audition

Bimodal bilinguals: A signed and a spoken language

Two linguistic output channels: Vocal and manual articulation
Two linguistic input channels: Audition and vision

Effects of bimodal bilingualism

• Language mixing
  Dan make the beds en dan doe ik de afwas. (Clyne, 1987)

“right!”

• Visual and spatial cognitive abilities

• Brain activity for spatial language

Effects of bimodal bilingualism

• Language mixing
  Dan make the beds en dan doe ik de afwas. (Clyne, 1987)

“right!”

Unimodal bilinguals must code-switch between languages

Bimodal bilinguals can code-blend (produce a word and sign at the same time)
Example of ASL-English code-blending

Re-telling a cartoon story to another bilingual

Effects of bimodal bilingualism

- Language mixing
  - Bimodal bilinguals prefer to code-blend than to switch between languages

- Visual and spatial cognitive abilities

Effects of bimodal bilingualism

Visual and spatial cognitive abilities

Proficiency in a sign language enhances mental imagery skill

Mental Image Generation Task

Memorize how block letters appear in a grid

Image Generation:
Imagine that the block letter is in the grid – Does the imagined letter cover the X?

You will have a chance to perform the task during the lecture
Mental Image Generation Results

Enhanced mental imagery skills may be tied to spatial language

Spoken languages

- English: The cup is on the table.
- Dutch: De kop staat op de tafel.

Prepositions express location

Signed languages

The location of the hands in space express location

Enhanced mental imagery skills may be tied to spatial language

Orientation of the hand depicts object orientation

“The car is facing the tree.”

Signers may generate rich mental images when describing spatial relationships

Effects of bimodal bilingualism

- Language mixing
  – Bimodal bilinguals prefer to code-blend than to switch between languages

- Visual and spatial cognitive abilities
  – Enhanced mental imagery ability, possibly tied to the enhanced visual-spatial demands of signing

Effects of bimodal bilingualism

- Brain activity for spatial language

Spatial language production in bimodal bilinguals

- Task:
  – Express spatial relations in ASL or English

- Comparison groups:
  – Deaf ASL signers
  – English monolinguals

- Method: Positron Emission Tomography (PET)
  – measures changes in blood flow in the brain
Bimodal bilinguals may process spatial relations for encoding in ASL, even when they speak English.

- Language mixing can be simultaneous
- Enhanced mental imagery skills
- Changes in brain activity when speaking English (spatial language)
Thank you!

Funding:
National Institutes of Health (R01 HD04773)

Thanks to all of our participants!

References and Further Reading

Linguistic Effects of Bimodal Bilingualism


Cognitive Effects of Bimodal Bilingualism


Neural Effects of Bimodal Bilingualism


Sign Language and Deaf Children

