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Early voice acquisition of heritage Greek in Germany

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Greek Voice System

The Modern Greek (MG) verbal system exhibits two different voice forms:

- (a) the active (Act) and
- (b) the non-active form (NAct)

The Act-form is typically found with transitive (causative) verbs (1) and a subclass of anticausatives (2):

1. To agori espase-**Act** to parathiro (active)
'The boy broke the window.'
2. To parathiro espase-**Act** (anticausative)
'The window broke.'

Greek Voice System (cont.)

The NAct-form typically alternates with the Act-form and is found with reflexives (3), a subclass of anticausatives (4), and passives (5):

3.
 - a. I mitera epline-Act to agori
'The mother washed the boy.'
 - b. To agori plithike-NAct (reflexive)
'The boy washed himself.'

4.
 - a. I mitera ekopse-Act ta nihia tu pediou
'The mother cut the child's nails.'
 - b. To nihi kopike-NAct (anticausative)
'The nail broke.'

5.
 - a. I mitera epline-Act ta ruha
'The mother washed the clothes.'
 - b. Ta ruha plithikan-NAct sto plintirio (passive)
'The clothes were washed in the washer.'

Greek Voice System (cont.)

Some verbs, however, lack an active form and only bear the NAct-form. These verbs have been called „deponents“ in the literature. Some of them are unaccusative/intransitive predicates (6a), while others are transitive (6b).

- 6. a. O babas erhete-NAct (deponent)
 'The father is coming.'
- b. To agori fovate-NAct ta skilia (deponent)
 'The boy is afraid of the dogs.'

(Embick 2000; Zombolou and Alexiadou under review; and references therein)

Research questions

In our study we raised the following questions:

- A. Does the marked NAct-form confuse children and forces them to produce errors by overusing the un-marked Act-form in place of the NAct-form?
- B. Are all voice structures associated with the NAct-form acquired the same way/in the same speed?
- C. Do the corresponding voice structures in bilingual heritage children transfer from the one language to other?
- D. Do bilingual heritage children acquire the two languages like their monolingual counterparts?

Participants and methods

Child:	- Boy, Filakos
Greek	- Simultaneous balanced Greek-German bilingual, 3rd generation heritage speaker in (South) Germany
	- Age at exposure to Greek and German: 0;0:1
Mother:	Simultaneous, balanced Greek-German bilingual, 2 nd gen.
Father:	Monolingual German
Input Greek:	<ul style="list-style-type: none">- Mother (speaks to F only in Greek)- Grandmother (speaks to F only in Greek)- Greek relatives and family friends (speak to F only in Greek)- Songs and books
Input German:	<ul style="list-style-type: none">- Father (speaks to F only in German)- German relatives and family friends (speak to F only in German)- Songs and Books- Children friends of F- Kindergarten 2;6-2;8 (1x weekly); 2;8-2;9 (3x weekly)
Method:	longitudinal study (av. 2 hours daily)
Age at recording:	2;0 – 2;9

Results

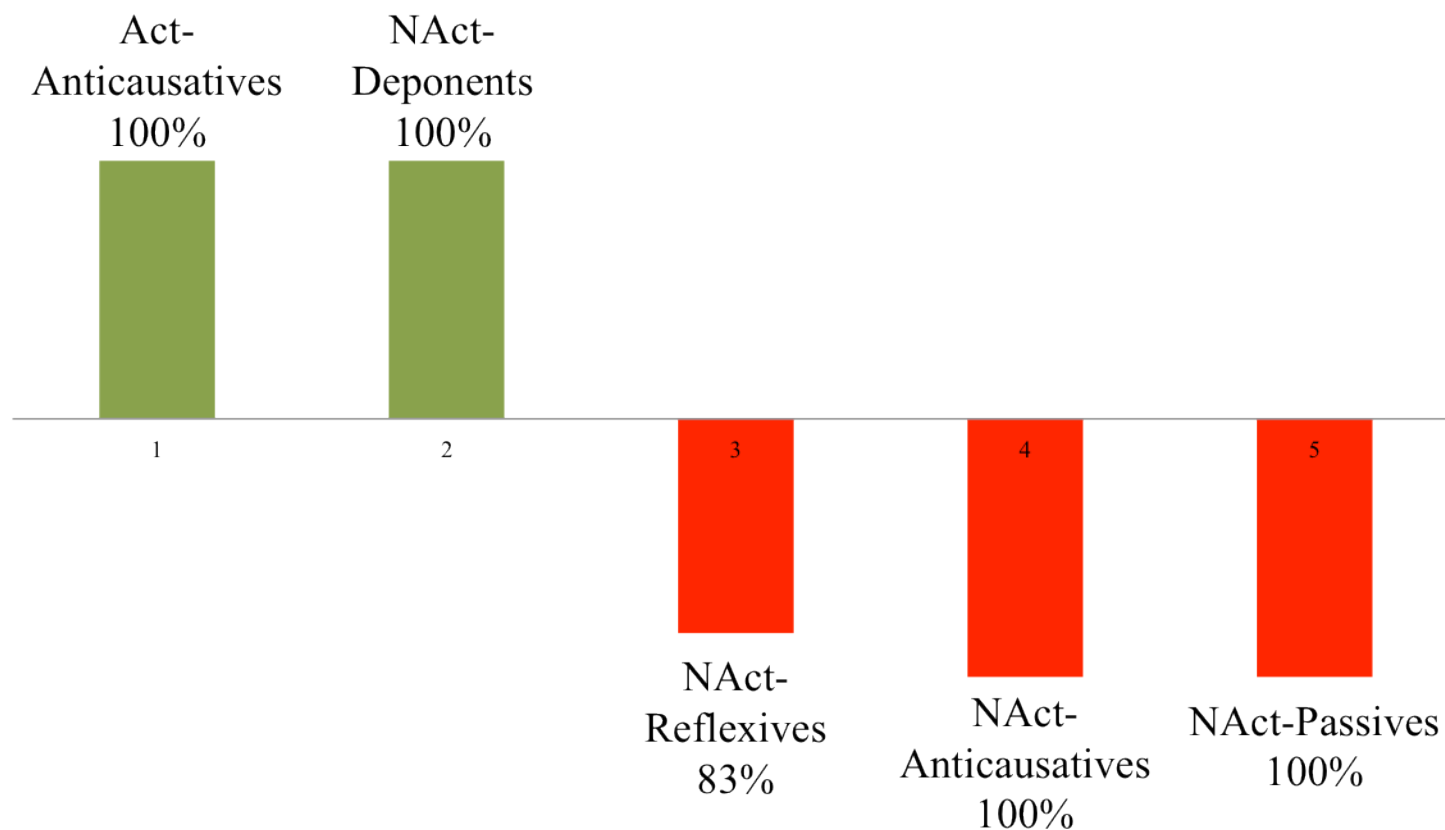


Diagramm 1 Voice structures in Greek by a German-Greek bilingual child, 2;0-2;9

Examples

NAct-Deponents

7. a. I mama kimate-**NAct** (2;0:12)
'The mother is sleeping.'
- b. Fovithika-**NAct** (2;1:05)
'I got scared.'
- c. Min herese-**NAct** (2;5:14)
'Don't be glad (about this).'

Examples (cont.)

Act-Anticausatives

8. a. (i mihani) Halase-**Act** (2;0:16)
'The camera broke.'
- b. (to sirtari) Eklise-**Act** (2;2:28)
'The drawer closed.'
- c. (to kuti) Anikse-**Act** (2;3:01)
'The box opened.'

Examples (cont.)

NAct-Reflexives

9. a. *O Filakos pleni-**Act** (= plenete-NAct) (2;1:7)
'Filakos washes himself.'
- b. O Filakos plenete-**NAct** (2;7:10)
'Filakos washes himself.'
- c. *O Filakos ksirizi-**Act** (= ksirizete-NAct) (2;8:22)
'Filakos shaves himself.'

Examples (cont.)

NAct-Anticausatives

10. a. *(To harti) Eskise-**Act** (= skistike-NAct) (2;8:12)
'The paper tore.'
- b. *To fagito kei-**Act** (= kegete-NAct) (2;0:25)
'The food burns.'
- c. *To nihi ekopse-**Act** (= kopike-NAct) (2;8:24)
'The nail broke.'

Examples (cont.)

(Impersonal) NAct-Passives

11. a. *Ti akui-**Act** etsi? (= akugete-NAct) (2;5:12)
'What sounds like this?'
- b. *Pos lei-**Act**? (= legete-NAct) (2;8:12)
'How is it called?'
- c. *To evala sto plintirio na plíni-**Act** (= plithí-NAct) (2;8:24)
'I put it in the washer to be washed.'
- d. *Thelo na skepásun-**Act** kala (ta podia mu) (= skepastún) (2;8:27)
'I want (my legs) be covered well.'

With regard to our
first research
question:

- Does the marked NAct-form confuse children and forces them to produce errors by overusing the non-marked Act-form in place of the NAct-form?

Yes, F generalises the Act-form over the NAct-form with

- a. NAct-Anticausatives
- b. Reflexives
- c. Passives

With regard to our
second research
question:

- Are all voice structures associated with the NAct-form acquired the same way/in the same speed?

No.

-F does not generalise Act-form over NAct-form with deponents; deponents are fully acquired from very early on.

-Reflexives are not fully acquired at this age; however, the first target-like reflexives appear earlier than anticausatives and passives.

-Target-like NAct-anticausatives as well as passives have not appeared until 2;9 (cf. diagramm 2).

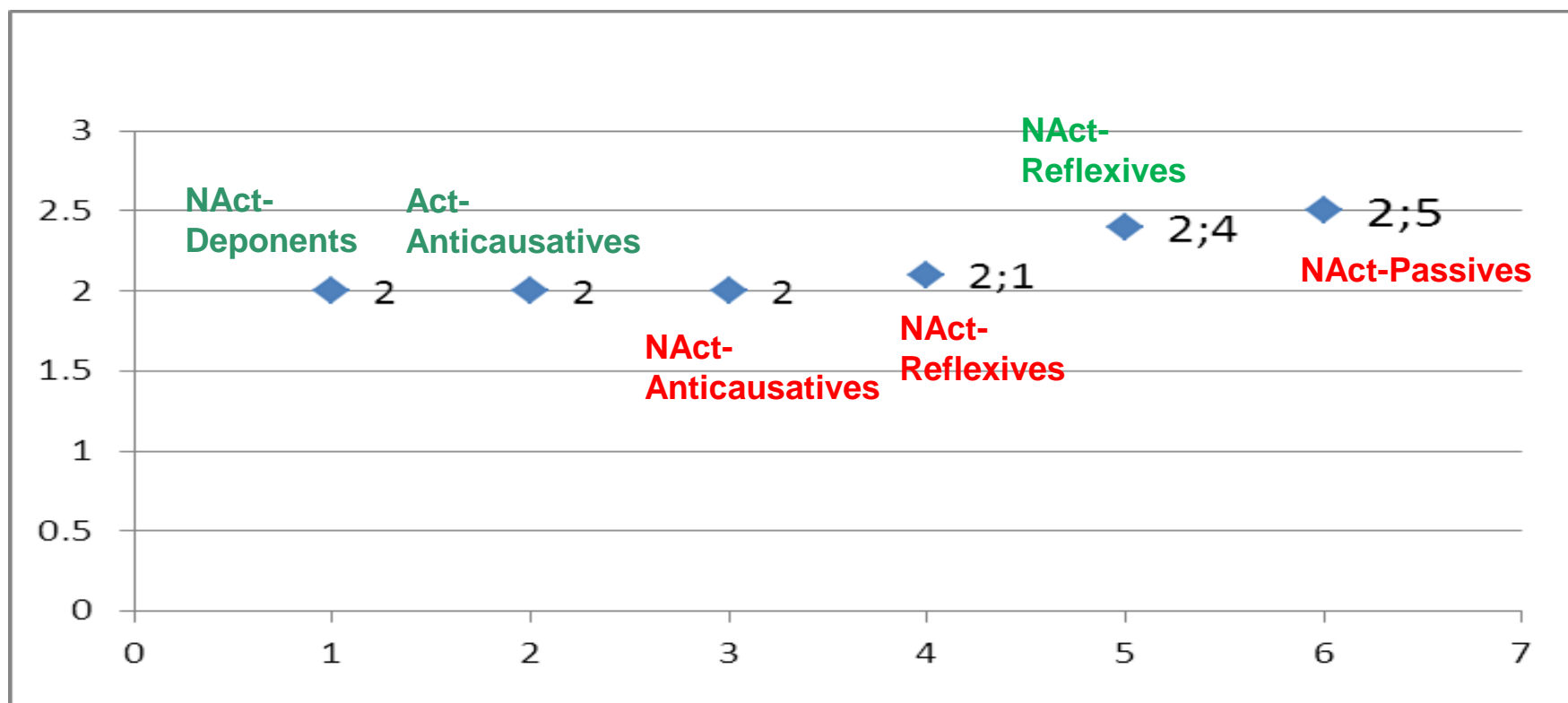
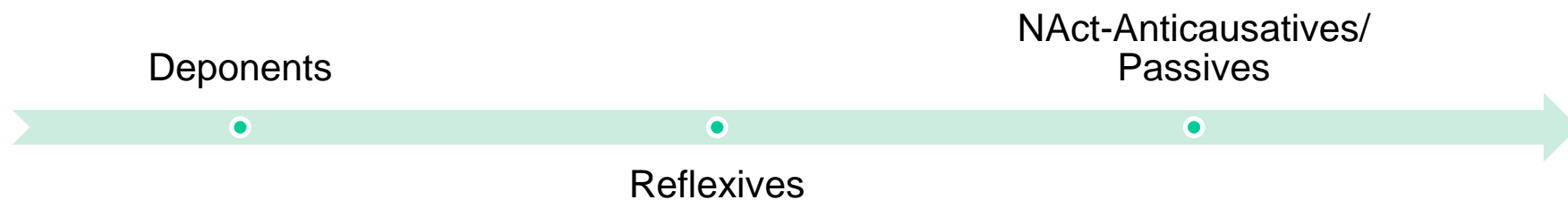



Diagramm 2 Development of voice structures according to age, 2;0-2;9

With regard to our
third research
question:

- Do the corresponding voice structures transfer from German to Greek in F (Greek heritage speaker in Germany)?

No. German transfer to Greek would produce different patterns (cf. examples 12-19).

Reflexives in German are formed via *sich*, i.e. they are marked (12a); still F uses the non-marked Act-form for reflexives in Greek (12b):

- 
12. a. Filakos wäscht **sich**
b. *O Filakos pleni-**Act** (2;1:7)
'Filakos washes himself.'

Note: F has not acquired reflexives in German either; he uses either infinitives (13a) – nevertheless, he has verbal inflection with non-reflexive verbs since 2;2:20 - or drops the reflexive anaphor *sich* (13b).

13. a. Filakos waschen (2;4:21)
b. *Filakos wascht ____ [i] (2;7:12)
'Filakos washes himself.'

Passives in German are always formed via an auxiliary and a participle, i.e. they are marked (15a), impersonal forms surface with *sich* (14a); still F uses the non-marked Act-form for passives in Greek (14b) & (15-b):

14. a. Was hört **sich** so an?
 b. *Ti akui-**Act** etsi? (2;5:12)
 'What sounds like this?'
15. a. Ich will, daß meine Beine gut **zugedeckt werden**
 b. *Thelo na skepàsun-**Act** kala (ta podia mu) (2;8:27)
 'I want (my legs) to be covered well.'

Note: No passive sentences have appeared in F's German by 2;9.


Anticausatives in German are either marked (16a) or unmarked (17a); although unmarked German anticausatives seem to transfer to Greek (F produces them with the unmarked Act-form) (16b), still F never transfers marked German anticausatives to NAct in Greek (17b-c):

16. a. Der Nagel brach ab
b. *To nihi ekopse-**Act** (2;8:24)
'The nail broke.'

17. a. Es öffnete **sich** nicht
b. *Den anihtike-**NAct**
c. Den anikse-**Act** (2;2:18)
'It did not open.'

Note: Anticausatives – either unmarked or marked – haven't appeared in F's German by 2;9.

Deponents (pseudo-reflexives) in German are always marked (18a); however, not all Greek deponents correspond to German pseudo-reflexives (19a). F never misforms Greek deponents transferring active form from German: examples like (19b) never occur in F's speech.

- 
18. a. Die Großmutter freut **sich**
b. I giagia herete-**NAct** (2;8:25)
'The grandmother is happy.'
19. a. Filakos sitzt/kommt/schläft
b. *Filakos kathi-/erhi-/kimai-**Act**
'Filakos sits/comes/sleeps.'

Note: Pseudoreflexives (deponents) have not appeared in F's German by 2;9.

With regard to our
fourth research
question:

- Do bilingual heritage children acquire the two languages like their monolingual counterparts?

Yes, F performs similarly to his monolingual counterparts in Greek:

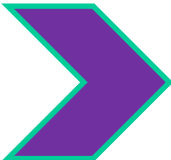
- I. Overuse of the Act-form with NAct-anticausatives
- II. No errors with deponents
- III. Earlier acquisition of reflexives than anticausatives and passives
- IV. Late acquisition of passives

Unitary Hypothesis: Bilingual children start with a single, fused system and later differentiate between the two languages (Volterra & Taeschner 1978; Schnitzer & Krazinski 1996).

Separate Language Hypothesis: Bilinguals acquire two L1s: the two languages develop independently of one another, and thus children do not borrow structures from their dominant language to their 'weaker' language (Clark 2009; Genesee 2000; Meisel 2001, 2011; Müller and Hulk 2001).

The likelihood of cross-linguistic transfer depends, in part, on the extent of overlap between the two languages, both at the syntactic and pragmatic level; Overlap and ambiguity between the languages are possible predictors of cross-linguistic influence (Döpke 1998; Hulk and Müller 2000; Foursha-Stevenson and Nicoladis 2011; Nicoladis 2003, 2006; Pearson 2009).

L1 Greek

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- Monolingual Greek speaking children aged 2;00-9;3 are reported to have problems to map the reflexive morphology on **anticausatives**, in spontaneous speech and experimental studies (20).

20. *To bluzaki eskise-**Act** (= skistike-NAct)
'The T-shirt tore.'

- No particular errors with **deponents** are reported.
- **Reflexives** are acquired earlier than anticausatives and passives; still, young children are reported to have understanding problems in comprehension tasks.
- (Agentive) **Passives** are not (fully) acquired at late child age (<9;0).

(Katis, 1981; Terzi and Wexler 2002; Terzi et al., under review;
Tsimpili, 2006; Unsworth et al., 2011; Zombolou et al., 2010a, 2010b)

L1 Greek & L1Greek-L1German



F has more parallels with his L1-Greek counterparts:

-rich vocabulary, verbal, nominal and adjectival inflection, clitic structure, tense and aspect.

- complex syntax already at an early age (cf. 21):

21. a. I mama ekopse ta agurakia na fai o Filakos (2;4:10)
'The mother cut the little cucumbers so that Filakos can eat them.'
- b. Anikse to (to kuti) na to dikso sti giagia (2;8:27)
'Open it (the box) to show it to the grandmother.'

A-Chains Deficit Hypothesis

The alternation of Act-form with the NAct-form in reflexives, anticausatives and passives in Greek causes problems for young children. **Why?**

Passives, anticausatives and reflexives involve semantic and syntactic acquisition mechanisms (complex constituent structure and non-canonical mapping of thematic roles) that have not matured at early age of development (*A-Chains Deficit Hypothesis*) (22). Maturation takes place after 5 or latter.

22. a. The dog is chased _____ [i] (by the boy)
b. The vase broke _____ [i]
c. The boy[i] washes himself [i]

Passives are acquired late in life - not before the age of 5-8 (e.g. English, German, Dutch, Hebrew, French, Spanish, and Russian) (Babyonyshev et al. 2001; Baldie 1976; Berman 1985; Hirsch and Wexler 2006; Horgan 1978; Mills 1985; Pierce 1992; Sinclair et al. 1971; Turner and Rommetveit 1967; Verrips 2000).

Cf. early passive acquisition in Bantu languages, Sesotho, K'iche' Mayan, Zulu and Inuktitut (Schaner-Wolles 1989; Tomasello 2003; Demuth and Kline 2006; Demuth et al. 2010).

(Babyonyshev et al. 2001; Borer and Wexler 1987, 1992; Hornstein 2001; Marantz 1984; Maratsos 1979; Reuland 2001)

Crosslinguistically, L1 French/Spanish/Turkish speaking children aged between 1;00 and 4;00 are reported to have problems in mapping the reflexive morphology on **anticausatives** (Aksu-Koç and Slobin 1985; Barriere and Lorch 2006; Ketrez 1999; López 1994).

ACD Hypothesis & Late Voice acquisition in Greek

As a result of this, the NAct-form in Greek which is associated with this maturation process is not acquired and forces children to use the non-marked Act-form instead.

Note that errors appear in one direction only, i.e. generalisation of the NAct-form over the Act-form, but not the other way around: F does NOT generalise the NAct-form with Act-Anticausatives. Errors like (23) do NOT occur:

23. *To parathiro spastike-NAct (=espase-Act)
'The window broke.'

Greek & German. Non-maturation of Voice is valid for F's Greek and German as well: The German marker *sich*, like the Greek NAct-form, is (partially) absent in reflexives/anticausatives and passives in both F's languages.

A-Chains Deficit Hypothesis (cont.)

The fact that deponents are well formed supports even more the A-Chains Deficit Hypothesis: Deponents do not involve any (a) form of alternation nor (b) semantic change nor (c) syntactic change nor (d) subject movement.

Deponents are - despite their NAct-form - acquired in the lexicon as „frozen“ verbal items (cf. Embick 2000; Zombolou and Alexiadou under review). In almost all acquisition models, e.g. *Dual Mechanism* or *Strong Lexicalist*, irregular forms such as past tense (24a) or plural forms (24b), must be independently stored in the lexicon with the label 'irregular', since they are not entirely predictable from a more general scheme.

- | | | |
|-----|----------------|---|
| 24. | a. Go/went | (Clahsen et al. 2003; Clark 1993; Halle and Marantz 1993; |
| | b. Tooth/teeth | Pinker 1999; Radford 1990; Xu and Pinker 1995) |

➤ Note that the NAct-form is not overused with Act-verbs, parallel to deponents. Errors like in (25) do NOT occur in F's Greek. This means that the NAct-form is recognised as alternating with the Act-form in producing reflexives, anticausatives and passives but NOT verbal lexemes.

25. *Trogome-NAct (= troo-Act)
'I eat.'

Adult heritage speakers of Greek

Adult heritage speakers of Greek in Argentina and Australia (spontaneous data interviews, aged 20-70) are found to have problems with Voice structures in Greek (Zombolou 2009, 2010, 2011a, 2011b; Zombolou & Alexiadou 2012):

➤ Overuse of the Act-form with NAct-anticausatives

26. *Ekopse-**Act** i (telefoniki) grami (Greek-Spanish, 52)
'The (telephone) line broke.'

➤ Overuse of the NAct-form with reflexives

27. *Proksu-**NAct** ke tha perasi (Greek-English, 33)
'Take care of yourself and you will recover (referring to the flu).'

➤ Overuse of the Act-form with deponents

28. *den thimao-**Act** tora (Greek-Spanish, 28)
'I don't remember now.'

➤ Very rare, if at all, use of passives

Adult heritage speakers of Greek (cont.)

We concluded that the adult Greek HS are Incomplete acquirers of Greek:

→ Language Transfer was excluded

→ L1 Greek data are (partially) similar

Heritage languages are spoken by early bilinguals with immigration background, whose home language is restricted.

An individual's grammar is 'incomplete' (or interrupted) when it fails to reach age-appropriate linguistic levels of proficiency as compared with the grammar of monolingual or fluent bilingual speakers of the same age, cognitive development, and social group.

HS are incomplete acquirers whose language structures are "frozen" at an early stage of development when the environment language becomes dominant and the minority language input decreases significantly (Montrul 2008; Montrul and Bowles 2009; Pearson 2009; Polinsky 2006, 2008, 2011; Potowski 2010; Silva-Corvalán 2003; and references therein).

Adult & Child HS of Greek

Attrition in adulthood could not be excluded in these cases.

Nevertheless, if data from Child HS are similar, this could support the Incomplete Acquisition hypothesis.

➤ F's data support the view that the adult Greek HS are not cases of language attrition but Incomplete Acquirers of the Greek syntax: F performs similarly to other adult HS with regard to NAct-anticausatives (cf. 29 with 30).

- | | | |
|-----|--|---------------------------|
| 29. | *To nihi ekopse- Act
'The nail broke.' | (Greek-German, 2;8:24) |
| 30. | *Ekopse- Act i (telefoniki) grammi
'The (telephone) line broke.' | (Greek-Spanish, 52 years) |

➤ The overuse of the Act-form with NAct-anticausatives by adult HS of Greek seems to be "frozen" at a young age after schooling (< 3;0) and remained incompletely acquired.

Adult & Child HS of Greek (cont.)

With regard to the lexicon – acquisition of deponent verbs – adult HS of Greek seem to be cases of language attrition: F - unlike his adult counterparts – has acquired deponents at a very young age already. Thus adult HS might have lost deponents in adulthood (cf. 31 with 32).

31. Fovithika-**NAct** (Greek-German, 2;1:05)

'I got scared.'

32. *Den thimao-**Act** tora (Greek-Spanish, 28)

'I don't remember now.'

Most changes in HS occur in the lexicon (cf. code-switching) (Köppe and Meisel 1995; Köppe 2007; Schmid 2007, 2009; Stolberg and Münch 2010; and references therein).

HS differ from their L1 counterparts with respect to aspects of grammar that are more language specific, and therefore, less core and more peripheral (Montrul 2006; cf. Bolger and Zapata 2011)

Future research

Until 2;9 F is (still) a balanced bilingual heritage speaker and performs similarly to his same-age monolingual counterparts in Greece.

Potential Tendency?

Input change: His situation has changed and German is expected to be his dominant language: F is since 2;8 3x times weekly in the German kindergarten, the family has moved to a village where F grows up together with German only speaking children (3;10 & 11;00) in the same house.

- Will he fully acquire the functions of the NAct-form or will his acquisition remain incomplete similarly to his adult counterparts in Argentina and Australia?
- Will he lose deponents in adulthood similarly to his adult counterparts in Argentina and Australia?

Future research (cont.)

In the meantime (< 2;10):

- F often replies in German although he is addressed in Greek.

- F performs better with Greek and German reflexives
(the reflexive marker *sich* appeared with reflexives).

-F overuses the NAct-form with reflexives (cf. 33 with 34):

33. *Girizome-**NAct** (Greek-German, 2;10:14)
'I turn myself.'

34. *Proseksu-**NAct** ke tha perasi (Greek-English, 33)
'Take care of yourself and you will recover (referring to the flu).'

- F still overuses the Act-form with NAct-anticausatives and passives.

- *Sich*-anticausatives and/or passive sentences have not appeared
in F's German yet.

Conclusion

The longitudinal study of one simultaneous Greek-German child heritage speaker in Germany (F, 2;0-2;9) revealed:

1. F produces errors in reflexives, anticausatives and passives in Greek by overusing the Act-form in place of the NAct-form.
2. F produces target-like deponent verbs despite the fact that deponents are also formed by the NAct-form.
3. F performs similarly to his L1-Greek counterparts.
4. F performs similarly to his adult Greek-Spanish as well as Greek-English counterparts in Argentina and Australia (except for deponents).
5. Language Interference between Greek and German is excluded because this would imply different acquisition patterns.

We concluded that the *Maturation Process* is responsible for this Voice acquisition delay. Furthermore, F's data support Zombolou and Alexiadou's (2012) hypothesis that adult HS of Greek in Argentina and Australia are *Incomplete Acquirers*: Voice structures are „frozen“ at early age when the hosting languages (Spanish and English) became their dominant language after schooling (< 3;0).



Thank you!

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