

## Some Aspects of Moroccan Arabic Agrammatism

Samir DIOUNY  
Chouaib Doukkali University  
Faculty of Letters and Humanities, El Jadida

En hommage au professeur Jean Luc Nespoulous  
UTM 28-29 janvier 2011

### Outline

- Introduction
- Approaches to Agrammatism
- The Study
- Results & Discussion
- Conclusion

## Introduction (1)

- Simplification of syntactic structure and the omission and/or substitution of bound and free functional morphemes (Googlass, 1968; Wenzlaff & Clahsen, 2005)
- Specific comprehension problems (Caramazza and Zurif; Jarema, 1998).

Mozilla Firefox Link

## Introduction (2)

- Kean (1979)
- Morphology (Lapointe, 1983)
- Syntax
  - Teature and trace deletion (Grodzinsky, 1990)
  - Tree-Pruning (Friedmann & Grodzinsky, 1997)
  - Underspecification of T/INFL (Wenzlaff & Clahsen, 2005)
- Processing (Kolk, 1998; Kolk et al. 2007).

### Approaches to Agrammatism (1)

- Normal syntax/impaired morphology (Kolk, and van Grunsven 1985).
- Impaired production/spared comprehension (Nespoulous et al., 1988);
- Deficient tense and spared agreement (Friedmann, 2006);

### Approaches to Agrammatism (2)

- Central representational deficit (Wenzlaff & Clahsen, 2004);
- Partial representational deficit (Friedmann, 2006).
- object naming /action naming

### Approaches to Agrammatism (3)

- These findings have received some cross-linguistic support (Goodglass et al., 1993; Kolk, 2000);
- Other studies have produced different results (de Villiers, 1978; Stavrakaki & Kouvava, (2005).
- This raises the question of whether and to what extent the dissociation between tense and agreement is a language-specific phenomenon.

### Approaches to Agrammatism (4)

- A related important question is whether agrammatic symptoms are specific to production or have corresponding manifestations in other modalities.
- The dissociation between tense and agreement does not hold for modalities other than production (Friedmann & Grodzinsky, 1997; Benedet et al., 1998)

## Approaches to Agrammatism (5)

- Other studies found aphasics' interpretation of tense morphology to be impaired in sentence-picture matching tasks, suggesting that difficulties with tense might, at least in some patient groups, be modality-independent (Pierce, 1981) .

## MA verbal morphology

- The perfective is suffixal;
- The imperfective is signaled by suffixes and prefixes.
- There is no dual or gender distinction in the plural form.
- The future is expressed by the use of a free morpheme "xadi" added to the stem.

## MA Verbal Morphology

### The Perfective

1.  
-ktəb-∅  
-writes-he
2.  
-kətb-ət  
-writes-she
3.  
-kətb-u  
-write-they (masc.fem.)

## MA Verbal Morphology

### The imperfective

1.  
- t-kətb-i  
- You-write-she
2.  
- tə-ktəb  
- You-write-he
3.  
- j-kətb-u  
- They write-they

## MA nouns and adjectives

- Gender: masculine & feminine.
- Numbers: singular & plural.
- Nouns and adjectives ending in /-a/ are usually feminine:
  - Tālib-a “student-fem”
  - Kbīr-a “big-fem.”
- **biru**                      **biruw-āt**                      “office”
  - Addition of /-at/ to the singular noun
  - Glide insertion is triggered off by the contiguity of two vowels.

## The Study: Participants

Subjects	Age	Sex	Work	Edu.	Etiology	Time Post-onset	Classification
Subject 1	47	M	teacher	+12	schaemic	8 years	Broca's aphasia
Subject 2	45	F	house wife	+15	trauma	3 years	Broca's aphasia

## The Study: Design and materials

- Spontaneous speech;
- Picture-description task;
- Recitation of a Koranic Verse;
- Action Naming & Object Naming;
- Repetition.

## Results: Spontaneous speech

- Halting, hesitant & labored
- Short utterances;
- Inconsistency with respect to grammaticality
- Sequences of nouns predominated;
- Tense violations compared to agreement violations.
- Verb omissions



## Recitation of Koranic verses

Subjects	Rel. n=1	Det. n=13	Prep. n=4	Nouns nb=13	Verb nb=6	Speech rate
Subject 1	0 (0%)	6 (46%)	3 (75%)	8 (61.5%)	0 (0%)	51.46 sec.
Subject 1	0 (0%)	11 (84.6%)	2 (50%)	12 (92%)	2 (25%)	32.36 sec.

## The Cookie Theft Picture

Subjects	nb of utterances	% of utterances as sentences	% of grammatical sentences	N	V
Subject 1	9	33%	11%	11	3
Subject 2	9	67%	44%	13	6
Controls	12	95%	100%	12	8

## Picture description: Tense & agreement

Agrammatics	% correct tense	% correct agreement
Subject 1	33%	67%
Subject 2	33%	100%

## Repetition: Tense & agreement

Repetition	% of correct verb tense & agreement		% of correct adjectives		% of correct nouns			
	Tense	Agreement	Masc.	Fem.	Singular	Plural	Masc.	Fem.
Subjects								
Subject 1	33%	67%	100%	100%	100%	100%	100%	90%
Subject 2	36%	64%	100%	100%	100%	100%	100%	100%
Controls	100%	100%	100%	100%	100%	100%	100%	100%

## Discussion (1)

- Questions:
  - Does the absence of some grammatical categories in agrammatism indicate:
    - Competence limitations? or performance limitations?
  - Can the tense and agreement disassociation be replicated for MA?

## Discussion (2)

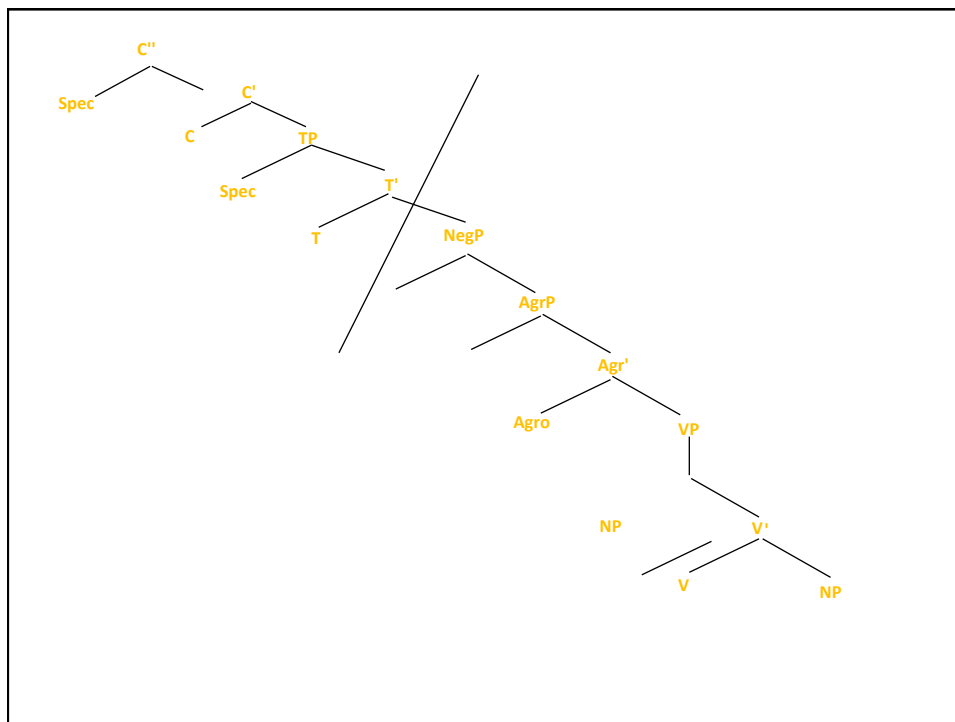
- Our data obtained are not only consistent with previous findings on agrammatic production (Menn & Opler, 1990), but also provide further support for the cross-linguistic validity of tense-agreement dissociation in agrammatic aphasia.
- There is ample evidence from a wide range of studies on different languages that tense is more impaired than agreement in agrammatic production.

### Discussion (3)

- Nespoulous et al. (1988, 1990) found out that their agrammatic subject had only tense errors.
- Benedet et al. (1998) found out that their six Spanish-speaking subjects produced better subject–verb agreement (63, 8 %), but worse verbal tense (5, 5 %).
- Ferreiro (2003) found out that tense was more impaired than agreement.

### Discussion: A Linguistic Account (1)

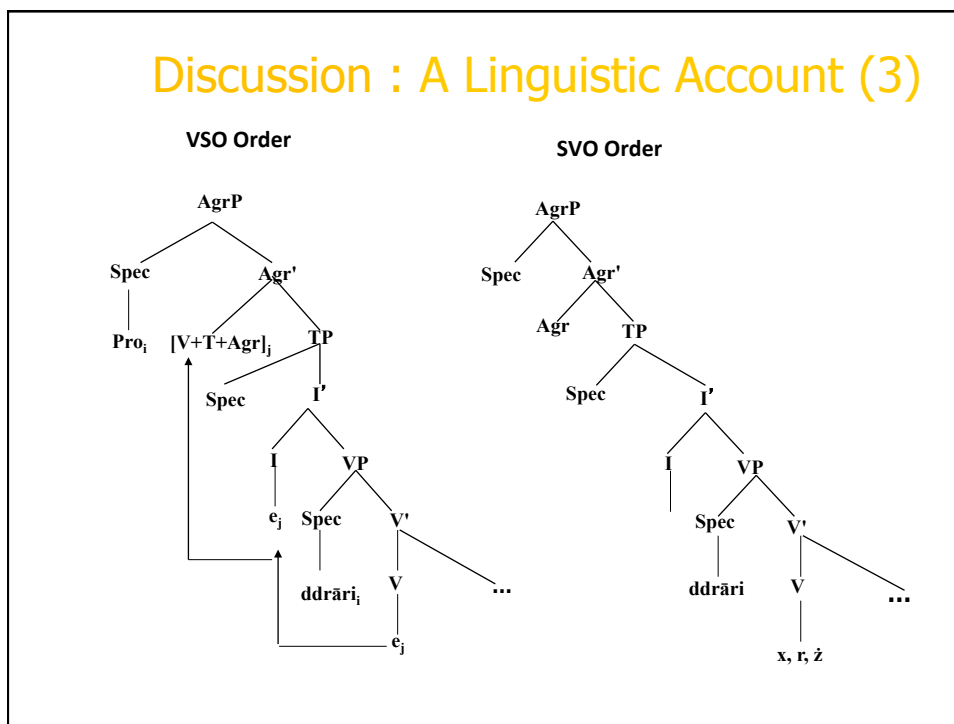
- The TPH requires that the tense node is higher than the agreement node, and that the tense node is pruned. Therefore, all functional categories above it should be lacking.
- Agreement markers are located lower in the tree than tense and this explains why they are spared.



## Discussion : A Linguistic Account (2)

- Accounts of MA assume that Agr is located higher than TP (Akkal, 1993; Benmamoun, 2000).
- The TPH would predict Agr to be more impaired than Tense.
- If this is the case, then how can the TPH explain the tense deficit?

### Discussion : A Linguistic Account (3)



### Discussion : A Linguistic Account (4)

- TPH is not compatible with recent theoretical developments.
- Chomsky (2000) no longer assumes a separate Agr projection but rather attributes Subject-verb-agreement to an operation which takes place in TP.
- Tense is an interpretable feature of the syntactic category T, and agreement has no functional category of its own.

### Discussion : A Linguistic Account (5)

- Agree establishes a structural relationship between the person and number features of a clausal subject and the corresponding uninterpretable features of a finite verb, which are checked by T.
- If T is pruned, *Agree* should not be able to operate because the host for a verb's person and number features (=T) has been deleted.

### Discussion : A Processing Account (1)

- Agrammatic difficulties in producing verb inflection cannot be explained by a structural account.
- Instead, a processing limitation appears to be a more plausible explanation.
- Tense is computationally more complex to produce than agreement.

### Discussion : A Processing Account (3)

- Carry more inflectional weight
- Determine the number of arguments
- Require a TP projection
- Move higher in tree to check features against inflectional morphemes
- Carry less inflectional weight
- fill out these arguments
- require a DP projection
- Nouns undergo one movement to get its features valued.

### Discussion : A Processing Account (3)

- The effects of processing load are explained by assuming that less working memory capacity is available for the computation of verb inflection
- MA agrammatics suffered limitations in processing capacities that affect their ability to “synchronize” morphological and syntactic information
- This resulted in “resynchronization of the phrase structure”, and dropping inflectional and/or lexical elements such as verbs resulted in "pruning"



### Discussion : A Processing Account (4)

- Resource demands for complex structures exceed the limit
- So, storage and computational processes compete with each other for the remaining limited resources, resulting in production deficits
- Lexical elements are already decaying and are suffering from response competition with other lexical items

### Discussion : A Processing Account (5)

- If a morpheme is selected at this stage, there is a high chance that it will be an erroneous one
- Agrammatic speech is the result of the effect of computational load
- Agrammatics use utterances requiring a reduced processing capacity in spontaneous speech, but selection of complete sentence types characterized by paragrammatic output

## Conclusion (1)

- MA agrammatism cannot be described in terms of a structural account but rather by difficulties in the implementation of grammatical knowledge.
- The linguistic problems attested in the performance of the patients is the result of impaired ability to access and exploit grammatical knowledge.

## Conclusion (2)

- Results indicate that agrammatic speakers are able to behave according to the task demands and, thus, to produce more complete sentences than those produced in free conversations
- Interestingly, incorrect agrammatic performance in free conversations is analysed as the effect of computational load.

## References

- Akkal, A. (1993) *Syntactic derivation of the inflections of the verb in Moroccan Arabic*. Doctorat d'Etat. Faculté des Lettres I, Casablanca.
- Bates, E., S. Chen, O. Tzeng, P. Li, and Opie, M. (1991). The noun-verb problem in Chinese
- Benedet, M. J., Christiansen, J. A., & Goodglass, H. (1998). A crosslinguistic study of grammatical morphology in Spanish-speaking and English-speaking agrammatic patients. *Cortex*, 34, 309–336.
- Benmamoun, A. (2000). *The feature structure of functional categories: A comparative study of Arabic dialects*. New York: Oxford University Press.
- Chomsky, N. (2000). Minimalist inquiries: the framework. In R. Martin, D. Michaels, & J. Uriagereka (Eds.), *Step by step* (pp. 89–155). Cambridge, MA: MIT Press.

## References

- Clahsen, H. 2008. Chomskyan syntactic theory and language disorders. In: M. J. Ball, M.
- Diouny (2008). Agrammatism 1: processing Accounts. *Revue de la Faculté des lettres et Sciences Humaines*, El Jadida. Morocco
- Diouny (2010). Some Aspects of Moroccan Arabic Agrammatism. Cambridge Scholar Publishing: Newcastle UK.
- Friedmann, N. (2006). Speech production in Broca's agrammatic aphasia: Syntactic Tree Pruning. In Y. Grodzinsky & K. Amunts (Eds.), *Broca's Region* (2006). Oxford University Press.
- Goodglass, H. (1993). *Understanding aphasia*. San Diego, CA: Academic Press.
- Kok, P, Kolk, H.H.J.& Havekort, M. (2007). Agrammatic sentence production: Is Verb-second impaired in Dutch? *Brain & Language*. 96: 243-254.

## References

- Menn, L. & Obler, L. (Ed.), (1990). *Agrammatic aphasia: A cross-language narrative sourcebook*. John Benjamins
- Nespoulous, J-L., Dordain, M., Perron, C., Ska, B., Bub, D., Mehler, J., Caplan, D. & Lecours, A. (1988). Agrammatism in sentence production without comprehension deficits. *Brain & Language*, 33, 273-295.