Foreword

This volume includes the proceedings of the fourth ISCA (International Speech Communication Association) Tutorial and Research Workshop on Experimental Linguistics, ExLing 2011, held in Paris, France, 25-27 May 2011. This is a follow up Workshop, which is organised biannually in Athens, Greece, from 2006 and thereafter.

Last time in Athens, in summer 2010, we discussed the possibility of organizing the next meeting in Paris. Philippe Martin volunteered to undertake the organisation and promote the research paradigm of Experimental Linguistics. In this spirit, we have gathered in Paris to continue our discussion on the directions of linguistic research and the use of experimental methodologies in order to gain theoretical and interdisciplinary knowledge.

We are happy to see a variety of disciplines involved, from phonetics and language typology to psycholinguistics and language acquisition. We are also happy to see young scientists accelerating and adopting innovative ways in the scientific study of language. Most crucially, our initial attempt has gained ground and is becoming an established circle of a new generation of linguists.

As usual, our colleagues are coming from a variety of different parts of the world and we wish them a prosperous exchange of scientific experience and a joyful stay in Paris. This is indeed the core of the ISCA events, which promote new ideas as well as international scientific exchange.

We would like to thank all participants for their contributions and ISCA for its support in organising this Workshop. We also thank the University of Athens for the publication of the proceedings as well as our students from the University of Paris Diderot for their assistance.

On behalf of the organisation committee

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Typology and spatial cognition in English, French and Greek: evidence from eye-tracking
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Abstract
Languages encode space in strikingly different ways (Talmy, 2000): Satellite-framed languages (e.g., English) lexicalize Manner in verb roots and express Path in satellites, whereas Verb-framed languages (e.g., French) lexicalize Path in verb roots, leaving Manner implicit or peripheral; other languages present parallel systems in which both Verb- and Satellite-framed structures are available (e.g., Greek). The present study investigates how speakers of three typologically different languages, English, French and Greek, performed a production task and allocated their visual attention while exploring and describing visual scenes involving motion events. The findings show that participants’ verbalizations and eye-movement fixations differed substantially as a function of language-specific factors, arguing that typological constraints have a clear impact not only on linguistic but also on non-linguistic behavior.

Keywords: spatial cognition, language typology, production, eye-tracking method.

Introduction
Languages map semantic elements in very different ways when expressing motion. Talmy (2000) classifies languages into: satellite-framed (e.g., English) and verb-framed (e.g., French); the former are languages that lexicalize the Manner of motion in the verb and use satellites (e.g., particles) to express Path information within one compact structure (see example 1); the latter are languages that lexicalize Path in the verb stem, leaving Manner information implicit or placing it at the periphery of the sentence (e.g., gerunds/adverbials), (see example 2).

1. A man is running into a house. (S-framed pattern)

2. Il entre dans une maison en courant.
   MANNER PATH
   Lit: ‘He is entering into the house by running.’ (V-framed pattern)

Another type of languages can equally manifest structures of both types. Greek displays such a mixed system, as illustrated in (1-4). However, for some authors, Greek is clearly a verb-framed language (Papafragou et al., 2006; Selimis, 2007), in which the V-pattern is dominant.

3. Είπε τη σημείωση (pros ta pano)

Proceedings of the 4th SICA Workshop ExLing 2011, 25-27 May, Paris, France
PATH MANNER PATH
Left running (to-upwards)

(4) Etreko μετα να σηκωθήκα
MANNER PATH PATH
Ran into to-the house

‘He ran into the house’ (S-framed pattern)

An additional issue relevant to the typological classification of Greek is prefixation. Greek exhibits a set of prefixes of motion verbs (e.g., απεβιβάζει, ‘to up-put’; εξέφυγε, ‘to out-come’; καταγράφει, ‘to down-write’; εξώτροπα, ‘to out-slide’) which function as satellites for Motion, Path and/or Manner verb roots. However, little is known about this phenomenon, which may raise important arguments regarding the real typological status of Greek. In the present study I examine preverbs of this type and the option of an additional S-framed sub-pattern that may exist as a result of verbal prefixes that share properties of satellites, as illustrated in (5).

(5) Aνερθεωντα
Ana[prefix]-ven(h)[Manner V-root] trecho[Manner V-gerund]
PATH MANNER/MOTION MANNER
up-walked/went running

‘He ascended running’ (S-framed prefixed pattern)

Such striking cross-linguistic differences, apart from their typological interest, are significant for the study of the relationship between language and cognition, and contribute to the debate opposing universalist approaches—according to which spatial cognition is based on universal perceptual and cognitive processes that are independent from language-specific properties—and relativist approaches—according to which language-specific factors affect how speakers construct spatial representations. In the context of this debate and while most studies showing language effects have been based on language use (Hickmann, et al. 2009; Slobin, 2006), the present study analyses verbal and non-verbal responses of speakers of typologically different languages (cf. Soroli & Hickmann, 2010a) in order to determine the extent to which language properties influence different measures of cognition.

Method
The present study investigated how 42 native speakers of English, French and Greek (14 per language) performed a verbal task and allocated their visual attention while exploring and describing visual scenes (clips) involving events of voluntary motion. The analysis of the verbal measures examined two aspects of the responses: the types of information selected for expression (focus) and the means whereby this information was expressed (focal). In Greek (see Soroli & Hickmann 2010b), Hickmann et al., submitted), the data were coded twice (Verb- vs. Satellite-coding). V-coding did not differentiate prefixed and plain verb forms, while S-coding decomposed prefixed verb forms into a verbal root and a satellite-like verbal prefix. As a result, verbal prefixes were treated as part of the verb in V-coding, but not in S-coding. The analysis of eye-movements examined the number, length and timeline of the fixations in specific areas of interest (Path vs. Path+Manner) in the clips.

Results and discussion
Subjects’ verbal analyses differed substantially as a function of language-specific factors. English speakers used compact structures that expressed both Manner and Path information and in which they systematically encoded Manner in verbs and Path in other devices. In contrast, French speakers mostly focused on Path information that was expressed in the verb, and either provided less information about Manner in the periphery of the sentence or did not use any other devices in the verbal network to express this information. As for Greek, it seems to present a third pattern, since some utterances seem to be V-framed, others are S-framed, and a third group seem to belong to an S-framed sub-system comprising Path prefixes. These patterns directly follow from language-specific factors that typologically differentiate English, French and Greek as Satellite-, Verb- and Parallel-framed languages respectively.

Turning now to eye-movements, although all speakers allocated more attention to Path overall, their focus also varied across language groups in all measures. More specifically, French speakers focused their gaze mostly on Path areas and this from stimulus onset until the end of the processing timeline. In contrast, the gaze of English and Greek speakers showed no preference for Path or Path+Manner areas of interest, with the exception of brief Path preferences at the onset of the stimuli for English speakers.

Conclusion
Overall the verbal and non-verbal findings point to differences in behavioural patterns as a function of typological language properties. In conclusion, we argue that typological constraints have a clear impact on linguistic behaviour, but also on non-linguistic behaviour. Such results contribute to current debates concerning the language-thought interface. In particular, linguistic analyses based on controlled methodologies, such as the one that was used in the present study, can yield comparable databases.
across a number of languages, thereby making it possible to put forth fine-grained and realistic hypotheses concerning the cognitive implications of typological properties.

Acknowledgements
I wish to thank Marga Hickmann for kindly providing her lab with for this study and precious advice. Eleftheria Valmas, Stathis Selimts, Zaphira Rohde, Christina Papadimitriou and Annemarie Verkerk, for much discussion and feedback on Greek. I am especially grateful to Lina Soroli, Sofien Gueranna, Maria Papageorgiou, Yiannis Vlassopoulos and Jean-Marc Borelly for help in experiment preparation and much inspiring discussion.

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