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Encoding motion events across languages: Typological constraints in bilingual agrammatism

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Background

Current psycholinguistic work [1] shows the need for placing linguistic diversity at centre stage in order to better understand the nature of language and the cognition that makes it possible in normal and pathological states. In the domain of space, Talmy's [2] intriguing typological proposal - that languages fall into two types as to their lexicalization patterns - has inspired a strong interest in the investigation of differences in the way semantic elements of space are mapped onto lexical and syntactic structures across languages. With respect to the expression of motion events and the ways particular spatial meaning components are associated with particular morphemes, languages are distinguished into: Satellite-framed, those expressing Manner of motion in the verb root and Path in satellites, such as English (e.g., Mary ran across the street); and Verb-framed, those lexicalizing Path information in the verb leaving Manner implicit or expressing it in the periphery of the sentence, such as French (e.g., Marie a traversé la rue [en courant], Lit. ‘Mary crossed the road [running]’). Such typological properties seem to strongly constrain how speakers encode motion in discourse [3;4;5], thereby raising new questions concerning the relationship between language and cognition. The ways spatial information is lexicalized or grammaticalized in discourse is also of great relevance for the study of aphasia in a cross-linguistic perspective, particularly in comparison to monolingual and bilingual agrammatic speakers who show dissociations between lexical and grammatical knowledge and who possess one or two languages with typologically divergent patterns. Despite a few crosslinguistic studies of aphasia [6;7;8;9], little is still known about universal vs. language-specific aspects of linguistic deficits and compensatory strategies in bilingual agrammatism. The present research addresses this question in the domain of spatial cognition, with particular attention to how individuals with aphasia vs. control speakers of typologically different languages encode motion events.
Method

The present study aims to determine the role of typological vs. language-independent factors in accounting for similarities and differences in verbalizations during normal and impaired language use. It compares how several groups of speakers perform a production task: monolingual English and French controls (N=40); agrammatic monolingual speakers of English and French (N=6); and a bilingual English-French speaker (N=1). Participants were asked to describe voluntary motion events presented visually in short video clips. The bilingual speaker did so in both target languages: first in French, and then in English. The analyses examined what information was expressed (Path and/or Manner), by what verbal means (verbs, adjuncts) and with which compensation strategies in the case of agrammatic speakers, if any.

French and English control speakers were expected to show different performances as a function of the typological properties of their language. English speakers should express Manner information in verbs and Path in other devices (e.g., in particles), whereas French speakers should focus on Path information, lexicalizing it in the verb and expressing Manner information optionally in the periphery of the sentence (e.g., in gerunds).

Finally, with respect to the aphasics, the following predictions were made: (1) syndrome-related factors should lead to particular difficulties in production, but (2) typological factors should interact in order to generate strategies to compensate for difficulties in the description task. More specifically, in French we expected that the monolingual agrammatic speaker would focus on the lexicalization pattern of his language, avoiding subordination for the expression of Manner and expressing exclusively Path in the verb but with difficulties in verbal morphology. Similarly, in English, we expected that lexical devices would be the preferred vehicles for the expression of motion (Manner in verb roots and Path in particles) as the most accessible devices for agrammatic. Consequently, for the bilingual participant, we expected that his productions would present: limited access to grammatical aspects of motion in both languages (verbal morphology, functional words, prepositions etc.) due to syndrome-related factors; and difficulties at different foci and loci with respect to each one of the available lexicalization patterns (e.g., prepositions and peripheral structures in French, inflection in English). In this respect we predicted that: he should either respect the lexicalization pattern of the target language or direct his production according to the most dominant pattern (either English or French) that could provide him the tools with the least cost or even exploit in parallel both patterns in order to compensate bidirectionally the less accessible information irrespective of the target language.

Results and discussion

Results show, crosslinguistic differences in the structures used by controls resulting in more semantic density in English (Manner verbs with Path adjuncts) than in French (Path verbs, infrequent Manner). The aphasics' data of the monolingual and bilingual speakers show some similarities: they all express less information than controls; in French we observe a focus on Path (in verb roots), omitting most grammatical elements (verbal morphology); in English the agrammatic speaker uses either Path particles alone (down), devices marking goals (top), or Manner verbs omitting tensed auxiliaries (running). Finally, the bilingual agrammatic speaker seems to adopt distinct strategies when describing events in different languages. In English he often omits tensed auxiliaries, and either uses light verbs together with Path particles (hear going up) or when using Manner verbs he mostly omits Path adjuncts (boy swimming). In French, he adopts a more minimalist strategy. Since Manner is typically optional and often peripheral in this language he chooses to omit subordination for Manner and focuses mostly on Path verbs (un singe monte ‘a monkey ascends’) or uses light verbs together with idiosyncratic Path prepositions (la chenille va des plantes ‘the caterpillar goes [up to] the plant’) possibly influenced to some degree from the English pattern.

Conclusion

The present crosslinguistic experimental study suggests that typological factors strongly constrain spatial encoding across populations. More specifically, monolingual agrammatism seems to develop strategies that are dependent both on the spatial system of their language and on their specific underlying deficit, whereas in bilingual aphasics despite some similarities with monolinguals due to language-independent (syndrome-related) factors, we observe diverging strategies that reflect different underlying processes for verbal encoding across and within language use.

References


