Paragrammatism

The (deviant) substitution (or omission) of grammatical morphemes in spontaneous speech

- (substitution makes it different to agrammatism)

Abnormal ‘grammatical’ sequences
Paragrammatism

Around as a term since 1914!

Originally seen as a problem of word order

But always seen as different to Agrammatism
Paragraphmatism

It is normally associated with fluent aphasias such as Wernicke’s aphasia

And is seen in language production
Paragrammatism

Difficulties in comprehension are also a feature of fluent aphasia
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If a Wernicke’s aphasic patient has good communicational and interactional skills they can sometimes disguise the comprehension deficit.
Wernicke’s aphasic patients may be unaware of the comprehension difficulty especially in the early days after onset
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Fluent aphasic patients find meaning dependent on syntax more difficult to understand, and find understanding complex sentences more difficult than simple sentences.
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Production:

Subjects may make mistakes; attempting to say one thing but saying another.

**Target**: what they want (or are instructed) to say

**Response**: what they actually say
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Testing

See Edwards (2005: 98-104)
Paragrammatism

Testing

A patient is asked to look at a picture and describe that picture in one sentence.

20 pictures in all.

The patient’s spontaneous speech is fluent and he displays both well and ill formed sentences.

The language produced by the patient can be compared to the language of non-aphasics users performing the same task.
## Paragrammatism

<table>
<thead>
<tr>
<th>Target</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>The man is running</td>
<td>The man running</td>
</tr>
<tr>
<td>The man is walking</td>
<td>Walking down the street</td>
</tr>
<tr>
<td>The man is painting the woman</td>
<td>Painting the picture</td>
</tr>
<tr>
<td>The boy is hitting the girl</td>
<td>The lady box</td>
</tr>
</tbody>
</table>
Paragrammatism

Out of four sentences, three of the four lexical verbs, *running, walking, painting*, are produced while the verb *hitting* in sentence (4) is substituted for a semantically related verb *box*, which is like *hit* in meaning.

There were also substitutions and omissions made with subject NP’s e.g. the man in sentence (2, 3) is omitted, and the NP in object position in sentence (4) is substituted e.g. girl replaced by lady.
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Although tense inflection is not seen in these examples we cannot assume it is missing altogether as the aspectual inflection ‘-ing’ is present.

The preservation of ‘–ing’ has been documented as a feature of non-fluent aphasia and has not been generally recognised as a feature of fluent aphasia.
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All four sentences are missing the constituent under T (Tense node).

Three of the sentences have the correct verb while the fourth does not.

*Substitutions* suggest the underlying node is intact

*omissions* suggest the underlying node is unavailable or missing.

The sentences produced by the patient showed that the patient understood the pictures and the task.
Paragrammatism

Fluent aphasic speakers produce fewer subordinate clauses than the normal controls.

However they also produced more canonical sentence structures than normal controls.
Paragrammatism

Fluent aphasic speakers produce fewer subordinate clauses than the normal controls. However they also produced more canonical sentence structures than normal controls.

So, avoiding complex structures.
Paragrammatism

This greater prevalence of canonical structures in fluent aphasics speech was shown to be the case across a wide range of languages.

The overall finding of a reduction in sentence complexity in fluent aphasic speakers of different languages tells us that this is a feature of fluent aphasia and is not a language specific feature.
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Edwards and Bastiaanse (1998) showed that fluent aphasic speakers although able to produce main and subordinate clauses used significantly fewer than the control group.
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So something is making it difficult for them to deal with complex structures
Paragrammatism

Testing can take place using elicited speech

Or using spontaneous speech
Paragrammatism

Connected fluent aphasic speech samples are assumed to be more naturalistic.

Therefore more representative of aphasic language abilities.
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Patients are recorded in a variety of situations;

Speaking with relatives, carers, speech and language therapists, and other researchers.

The samples vary in length, and manner. The aphasic patients know they are being recorded.

The samples gathered are compared to normal non-aphasic individuals.

Speech samples are usually about two minutes long or three hundred words.
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The task can fairly straightforward such as re-telling the Cinderella story!
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Hagoort and colleagues (1999), suggest that syntactic, semantic, and pragmatic information all play a role in determining the meaning of a sentence.

Therefore sentences given in a test situation with no additional contextual information may be understood less than the same sentence within a communicative process where extra syntactic, semantic, and pragmatic information is available (Edwards, 2005: 157).
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Wernicke’s aphasics were aware of the syntactic and pragmatic information but were unable to integrate it.

Wernicke’s aphasics have deficits with semantic combinatorial operations, and also difficulties in lexical-semantic integration processing.
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Broca’s aphasics are said to have reduced lexical activation while Wernicke’s aphasics are said to have increased lexical activation.

Both under-activation and over-activation can result in a deficit for combining lexical, syntactic, and pragmatic information in thematic structures.
Paragrammatism

Broca’s aphasics are said to have reduced lexical activation while Wernicke’s aphasics are said to have increased lexical activation.

Both under-activation and over-activation can result in a deficit for combining lexical, syntactic, and pragmatic information in thematic structures.

The former because lexical entries would only map on weakly to the thematic roles, and the latter because the overly activated system would be unable to select the appropriate thematic structures from all of those activated.
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A Lexically driven account suggests that word finding difficulties, or failure to activate the appropriate word would therefore impair syntax and sentence formulation.

The syntactic ‘frame’ required by a verb for instance would not be completely available so the paragrammatic would be unable to properly construct the sentence.
Paragrammatism

In the study by Faroqi-Shah, and Thompson (2002) the relation between lexical retrieval and sentence formulation was examined.

Seven Wernicke’s aphasic speakers and seven Broca’s aphasic speakers participated, and narrative speech samples of the Cinderella story were obtained from each participant using different pictures depicting actions accompanied by varying lexical information i.e. nouns and verbs, to elicit the speech samples.
Paragrammatism

The study examined the production of reversible and non-reversible actives and passives in Broca’s and Wernicke’s aphasia.

Wernicke’s aphasic subjects showed difficulty with producing and comprehending passive sentences, in particular passive sentences with reversible roles e.g. ‘the man was hugged by the woman’, just like agrammatic aphasics.

So it looks as if paragrammatism and agrammatism aren’t as different as was once thought!
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Broca’s aphasic subjects produced more morphological errors than Wernicke’s aphasics who were more impaired in object-naming.
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They both showed some similarities across the tasks i.e. grammatical morpheme errors, role reversal errors, preposition errors, unrelated sentences, and non-sentences. The most common error noted was the difficulty with reversible passives.
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In conclusion the authors failed to find a direct effect of lexical cues on the success of sentence production both in Broca’s and Wernicke’s aphasia, suggesting the relationship between lexical and syntactic mechanisms is far more complex than a lexically driven account implies.
They also note the underlying sentence production deficits seem to be different for both Broca’s and Wernicke’s aphasic subjects. In Wernicke’s aphasia, they suggest the difficulty is an accessing and self-monitoring failure. In Broca’s aphasia, they suggest the difficulty is in retrieving grammatical morphemes.

(Faroqi-Shah and Thompson, 2002: 412-426)