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Can You Reach for the Planets? – The Processing of Idioms in Aphasic Patients

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Idioms like ‘*to pull someone’s leg*’ differ from literal language in both their semantic and syntactic fixedness (e.g., Gibbs et al., 1989). They contradict the compositional principal according to which the meaning of a complex phrase can be constructed from the meaning of its individual parts and their syntactic combination. For example, the meaning ‘*she has played a joke on him*’ cannot be derived from the meaning of the single words of the idiomatic phrase ‘*she has pulled his leg*’. Psycho- and neurolinguistic models thus examine how the meaning of idioms is stored and processed – as a whole unit or via the single parts?

Previous studies on the processing of idioms in German have shown that not only the idiomatic meaning but also the meaning of single words is activated upon reading or hearing an idiomatic sentence (e.g., Smolka et al., 2007).

The present study examines the processing of idioms in aphasic patients: First, do they understand the meaning of an idiom as well as that of a literal sentence? Second, do aphasic patients recognize the meaning of an idiom via the single words or as a whole unit? Third, is the idiomatic meaning recognized, if a noun or verb is substituted by a semantic association?

In a picture-to-sentence-matching task, the processing of idioms in twenty-five aphasic patients was compared with that in a healthy control group (matched in age and education). Participants heard either (1) an idiomatic sentence, (2)-(3) an idiomatic sentence with an exchanged noun or verb, or (4) a literal sentence.

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| 1. She has always reached for the stars. | (idiom) |
| 2. She has always reached for the <i>planets</i> . | (associated noun) |
| 3. She has always <i>grasped</i> for the stars. | (associated verb) |
| 4. She has always reached for the <i>sweets</i> . | (unrelated) |

Participants had to decide as fast and as correct as possible (via a push button box), which of three pictures (presented on a screen) best depict the meaning of the sentence. Pictures (critical for idiomatic sentences) represented (a) the idiomatic meaning, (b) the literal meaning, and (c) an unrelated meaning.

Analyses of both response times and error rates point to a dysfunctional processing of idioms in aphasic patients. They perfectly matched literal pictures to the literal sentences. However, in more than 60% of the cases, they also matched literal pictures to idiomatic sentences; and correct picture-matching for idiomatic sentences was significantly more slowly than that for literal sentences. By contrast, the control group did not show such a processing difference between idiomatic and literal

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sentences. The results will be discussed with regard to models of idiom processing in both aphasic and healthy populations.

References

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