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Silent gestures speak in aphasia

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Silent gestures speak

Background & Aim

As the result of brain damage, people with aphasia (PWA) have language difficulties (Goodglass, 1993). Consequently, their communication can be greatly affected. This raises the question of whether gestures could convey information missing in their speech. Although it is known that PWA spontaneously use gestures when they speak (e.g. Sekine & Rose, 2013), it remains largely unknown to what degree PWA can consciously compensate for information missing in speech using gestures. In a previous study, we have shown that PWA use pantomime, or silent gestures, i.e. gesture in absence of speech, differently from non-brain damaged people (NBDP) (van Nispen et al., 2016). The present study evaluated the comprehensibility of PWA's pantomimes and explored whether they can compensate for information PWA are unable to convey in speech.

Methods & Procedures

We analysed the pantomimes NBDP (n=20) and PWA (n=38) used to depict 30 items (object, plants and animals) from the Boston Naming Task (Kaplan et al., 1983). In the absence of any measures on gesture comprehensibility, we designed two judgment tasks: forced-choice or open-ended questions. To determine how much information these pantomimes conveyed judges (n=273) performed one of the two judgment tasks. Furthermore, we compared the information conveyed in pantomime to the information conveyed in speech. We also looked into factors influencing pantomime's comprehensibility.

Results

Comprehensibility scores for PWA's pantomimes were lower (73.2% correct) than for those used by NBDP (95.7% correct), in the forced-choice score $F(1,56)=33.30$, $p<.001$, and open-ended score (PWA = 10.2% and NBDP = 25.5%), $F(1,56)=56.95$, $p<.001$. Furthermore, we found slight differences between people able to use only one, their right hand, or both hands, both for NBDP and PWA (forced-choice score $F(1,56)=3.83$, $p<.001$, and open-ended score $F(1,56)=9.34$, $p<.001$). Objects for which individuals depicted its use were best understood. It is important to note that all PWA were able to convey information in pantomime that they could not convey in speech. Individuals conveyed information in pantomime which they were unable to convey in speech for 2 up to 27 out of 30 items.

Conclusion & Implications:

In the absence of any convention on the meaning of the pantomimes conveyed, our judgement studies showed to be effective in revealing the information these gestures convey. In doing so, this is one of the first studies to reveal the comprehensibility of pantomimes, both for NBDP and PWA. Pantomimes, even though sometimes impaired,

conveyed information that PWA cannot convey in speech. These findings highlight the potential benefit of pantomime for people with communication difficulties.

References

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