

The picture – word interference paradigm: grammatical class effects in lexical production.

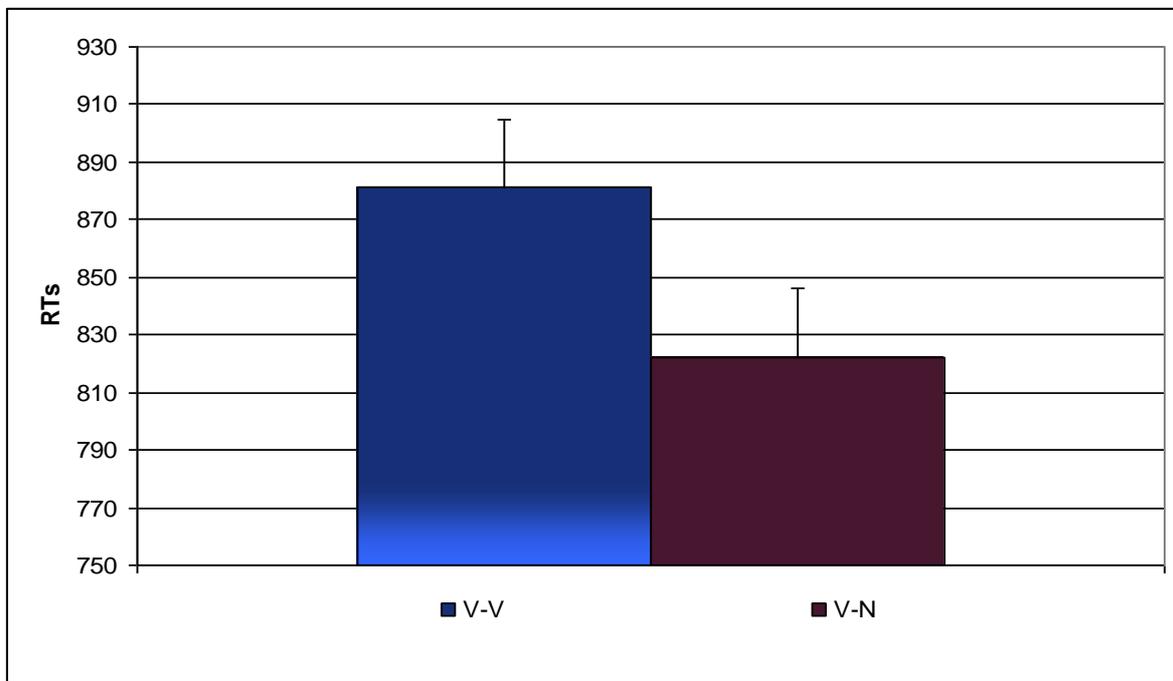
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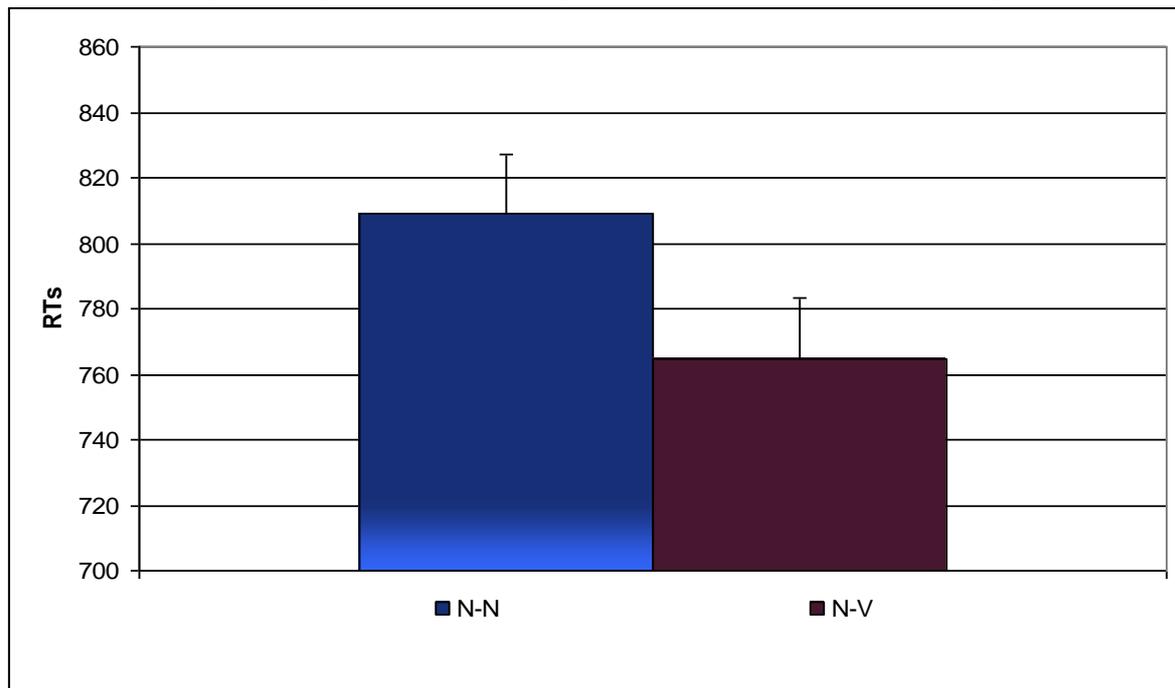
There are different and contrasting data about the role of grammatical class information in the picture-word interference paradigm. In a seminal study, Pechmann & Zerbst (2002) asked participants to name target pictures of objects in presence of distracter words that could be either nouns or adverbs. Participants had to name the pictures with definite determiner noun phrases. Results evidenced that participants were slower in presence of noun distracters compared to adverbs. However, in a recent study, this hypothesis has been challenged by Janssen, Melinger, Mahon, Finkbeiner, Caramazza (2010). According to the authors the effects observed in the previous studies are due to a semantic effect of imageability of nouns compared to adverbs. In a picture-word interference experiment, they selected pictures of objects to name with nouns and orthogonally manipulated word class (nouns vs. verbs) and imageability (low vs. high imageability) of the distracters. The results evidenced that distracters imageability but not word class affected naming latencies.

We decided to clarify the role of grammatical class and imageability in two picture-word interference experiments. In the first experiment, participants had to name pictures of actions with verbs in the infinitive form (e.g. sciare, to ski). Pictures were paired with syntactically related distracters, verbs (e.g. dormire, to sleep), or unrelated distracters, nouns of object (e.g. tavolo, table). Distracters were balanced for semantic and lexical factors as imageability, frequency and length. Results evidenced that participants were slower when they had to produce a verb in presence of a distracter verb than in presence of a distracter noun.



However, as in the related condition targets and distracters both belonged to the semantic category of actions, these results could also be explained as a semantic effect. In order to avoid this possible confounding between grammatical and semantic effects, a second experiment was run. Pictures of objects were selected to be named with nouns (e.g. chiesa, church). Each picture was paired with a distracter that could be either a noun denoting an action (e.g. risata, laughter) or a verb (e.g. ridere, to laugh). As in experiment 1, distracters

were balanced for semantic and lexical factors. Results evidenced that participants were slower when they had to produce a noun in presence of a distracter noun compared to a verb.



As the related distracter was grammatically a noun but semantically an action, the effect observed suggests a word class effect. In addition, the results evidence that grammatical class distinction cannot be always explained on a semantic base account (e.g. imageability). However, before drawing conclusions about the role of grammatical class effects obtained by means of the paradigm and their implications for the current models of lexical production more experiments are in order.

References:

- Janssen, N., Melinger, A., Mahon, B.Z., Finkbeiner, M., & Caramazza, A. (2010) - The word class effect in the picture-word interference paradigm. - *Quarterly Journal of Experimental Psychology*, 63, 1233-1246.
- Pechmann, T., & Zerbst, D. (2002) - The activation of word class information during speech production - *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 28(1), 233-243.