



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

The sign of “Undue Contact” in the Object Use Test

Citation for published version:

Bartolo, A, Della Sala, S & Cubelli, R 2016, 'The sign of “Undue Contact” in the Object Use Test', *Cortex*, vol. 75, pp. 235-236. <https://doi.org/10.1016/j.cortex.2015.06.016>

Digital Object Identifier (DOI):

[10.1016/j.cortex.2015.06.016](https://doi.org/10.1016/j.cortex.2015.06.016)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Cortex

Publisher Rights Statement:

© 2015. This manuscript version is made available under the CC-BY-NC-ND 4.0 license <http://creativecommons.org/licenses/by-nc-nd/4.0>

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



The sign of “Undue Contact” in the Object Use Test

Angela Bartolo ^{a,b*}, Sergio Della Sala ^c, Roberto Cubelli ^d

a) SCALab, CNRS UMR 9193, Univ Lille, BP 60149, 59653 Villeneuve d'Ascq, France

b) Institut Universitaire de France, Paris, France

c) Human Cognitive Neuroscience, Psychology, University of Edinburgh, Edinburgh, UK

d) Dipartimento di Scienze della Cognizione e della Formazione, Università di Trento, Italy

* corresponding author:

SCALab CNRS UMR 9193

Université Charles-de-Gaulle Lille 3

Domaine universitaire du Pont de Bois

BP 60149, 59653 Villeneuve d'Ascq Cedex

France

Email : angela.bartolo@univ-lille.fr

Word count: 518

Keywords: Object use, limb apraxia, apraxia assessment, stroke, dementia

Object Use is frequently assessed in apraxia testing (Cubelli, Marchetti, Boscolo, & Della Sala, 2000). The actual use would be unfeasible in a clinical setting for practical and hygienic reasons (e.g., use of a glass would require contact with the lips). Therefore, examinees are not asked to really use the objects, rather to show their use. Healthy controls easily pretend to use the object by showing the gesture associated with it (e.g., bringing the glass close to one's mouth and tilting it).

We have observed the performance of a left frontal stroke patient who appeared unable to mimic the use of objects and was compelled to complete the gesture ending it with a contact.

*Manuscript

PP is a 61 year old woman with 11 years of formal education. She was examined 30 days after her left ischaemic stroke. She was aphasic (pathological scores in both a picture naming test and in the Token Test, 47/80, cut-off=61, and 18/36, cut-off=26.5, respectively; Laiacina, Barbarotto, Trivelli, & Capitani, 1993; De Renzi & Faglioni, 1978) with preserved visual-spatial abilities. In the Limb Apraxia Battery (Bartolo, Cubelli, & Della Sala, 2008; Bartolo & Cubelli, 2014), PP performed below par in the tests assessing the production of intransitive gestures on visual command (6/15) and on the imitation of meaningless gestures (9/15). She executed the Object Use Test committing no apraxic errors (15/15) but finishing her gestures with unsolicited contacts.

PP wrote on the testing table with a pen; pounded on the desk with the hammer; threaded a needle in her jersey; put a cigarette in her mouth; and brought a glass to her lips.

Her behaviour was unexpected though we realised that we had never considered it a deviant conduct, hence never singled it out in formal apraxia assessments. We reanalysed the videos of patients recruited for a previous apraxia study (Bartolo, 2002) considering their performance with those objects which would not require a real contact for demonstration of use: Knife, hammer, pen, key, cigarette, needle, comb, and glass. Data on a small group of people with Alzheimer's Disease (AD) have been also collected. Their dementia severity, as assessed by the MMSE (Folstein, Folstein, & McHugh, 1975) ranged from 16 to 25 (mean = 20.6, sd =3.4).

Table 1 shows the frequency of “contacts” in PP and other left hemisphere stroke patients and people with AD. Although they showed deficits in gesture processing, people with AD never presented with unsought contact. The phenomenon of “undue contact” in object use assessment appears specific as it was observed only in stroke patients, independently of their type of apraxia.

This newly observed sign could be interpreted as a failure to pretend to use the objects (ending the gestures before actual contact) due to the inability of stopping the motor programme once it has been retrieved from procedural memory and initiated. Alternatively, unwanted contact could be accounted for within the frame of the automatic/voluntary dissociation often reported in apraxia: Patients could automatically use the objects (if the gestures are correct) or attempt to use them (if the gestures are wrong), but they could not voluntarily play-act their use.

References

- Bartolo, A. (2002). New tests for the assessment of a cognitive model and the evaluation of the action semantic. Unpublished Ph.D. Thesis, University of Aberdeen, UK.
- Bartolo, A., & Cubelli, R. (2014). The cognitive models of limb apraxia and the specific properties of meaningful gestures. *Cortex*, 57, 297-8.
- Bartolo, A., Cubelli, R., & Della Sala, S. (2008). Cognitive approach to the assessment of limb apraxia. *The Clinical Neuropsychologist*, 22, 27-45
- Cubelli, R., Marchetti, C., Boscolo, G., & Della Sala, S. (2000). Cognition in action: Testing a model of limb apraxia. *Brain and Cognition*, 44, 144–165.
- De Renzi, E., & Faglioni, P. (1978). Normative data and screening power of a shortened version of the Token Test. *Cortex*, 14, 41-49.
- Folstein, M.F., Folstein, S.E., & McHugh, P.R. (1975). "Mini-mental state": a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, 12, 189-198.
- Laiacina, M., Barbarotto, R., Trivelli, C., & Capitani, E. (1993). Dissociazioni semantiche intercategoriale: descrizione di una batteria standardizzata e dati normativi. *Archivio di Psicologia, Neurologia e Psichiatria*, 54, 209-248.

Table 1. Frequency of "undue contacts" in PP, left hemisphere (LH) stroke patients, and people with AD.

	Correct Use (%)		Wrong Use (%)	
	without contact	with contact	without contact	with contact
PP	0	100	0	0
LH Stroke (n= 8)	34	52	5	9
AD (n=7)	69	0	31	0