

# Cultural adaptation of the oxford digital multiple errands test (OxMET) for an English speaking North American population

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## INTRODUCTION

Executive function refers to higher-level mental abilities which enable an individual to adapt to novel situations, shift between tasks, and inhibit prepotent behaviours in order to reach a goal [2]. Sometimes individuals with acquired brain injury may perform well on highly structured abstract tasks but may have impairments in everyday life [3]. The Multiple Errands Test (MET) was created to identify impairments in everyday behaviour which are missed on highly structured assessment of executive function [3]. The MET uses a shopping scenario with rules, multiple tasks, and constraints on time or resources. Various versions exist of the MET, including home-based assessments [4], hospital versions [5,6], and generic/adaptable versions [7]. The Oxford Digital Multiple Errands Test (OxMET; [1]) is a computer-tablet based, aphasia friendly, 5-minute assessment that uses a British shopping street scenario to assess executive functioning [1]. It requires participants to buy 6 items and answer two questions with constraints on number of visits to shops, time used, and money spent. The test was standardised and normed in a United Kingdom based sample of 124 healthy adults and was subsequently validated in a clinical sample of stroke survivors [1]. Our objective was to detail the North American cultural adaptation of the OxMET.

## METHODS

Six occupational therapy students (OTs) and as well as a highly experienced expert (author SB) reviewed the OxMET task, each completing a standardised cultural adaptation document (see doi.org/10.17605/OSF.IO/2QJ9H for the document). After identification of items and shops which required adaptation from for a North American sample, the illustrator on the OxMET team (author AJ) redesigned the stimuli and these were checked by authors SB and SW. An iterative approach to stimuli design was used, with author SB checking stimuli and assessing suitability and requesting changes, this led to further stimuli refinement. In addition, following completion of the OxMET stimuli adaptation, 5 occupational therapists completed the Suitability Assessment of Materials for evaluation of health-related information for adults (SAM) questionnaire [8] to assess the finalised cultural adaptation; specifically, sections regarding literacy demand (sentence construction and vocabulary) and cultural adaptation (all sub sections). Figure 1 shows the original OxMET shopping street and example of stimuli.

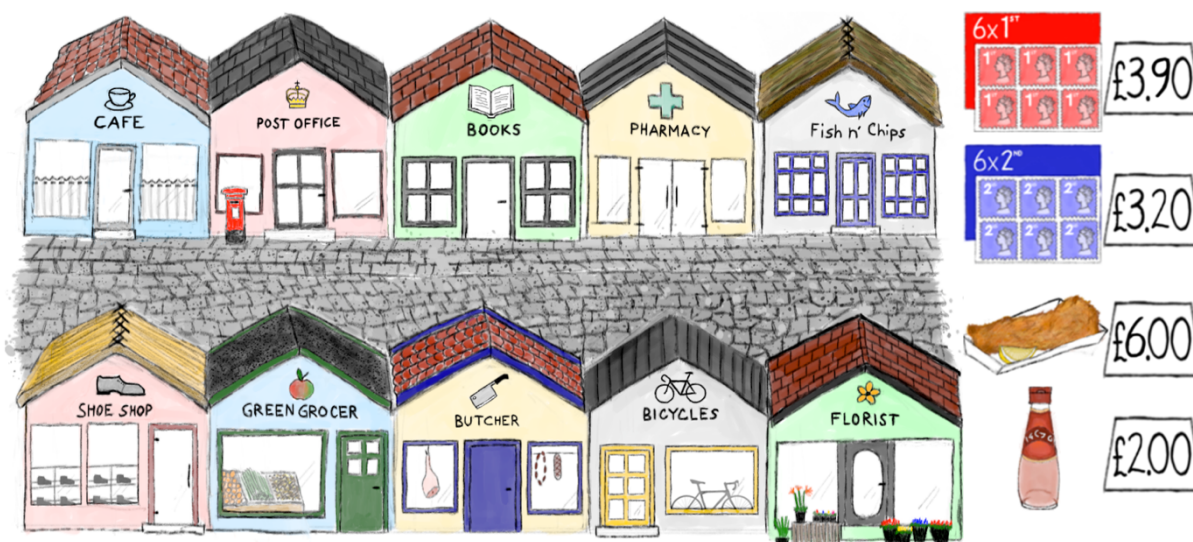


Figure 1. The original shopping street from the Oxford Digital Multiple Errands Test (OxMET) including exemplar items on the right side of two types of stamps, battered fish, and malted vinegar.

## RESULTS

### Stimuli changes

Stimuli were integrated and adapted into the OxMET-USA. Changes are detailed in Table 1.

Table 1. Culturally adapted changes from the original OxMET to the OxMET-USA

Original stimuli in OxMET	Adapted stimuli in OxMET-USA
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Shopping list item: 'Wellies'	'Rain boots'
Shop name/type: 'Shop'	'Store'
Shop name/type: 'Post Office'	'U.S. Postal Service'
Shop name/type: 'Green Grocer'	'Farmers Market'
Shop name/type: 'Butchers' shop'	'Meat Market'
Shop name/type: 'Fish n Chips'	'Burgers'
Currency: '£'	'\$'
Item in shop: 1 <sup>st</sup> and 2 <sup>nd</sup> class stamps	Forever stamps, and post-card stamps
Item in shop: 'malt vinegar'	'ketchup'
Item in shop: 'seed tape'	'seed packet'

Figure 2 shows the new OxMET-USA design and exemplar stimuli with currency and style changes.

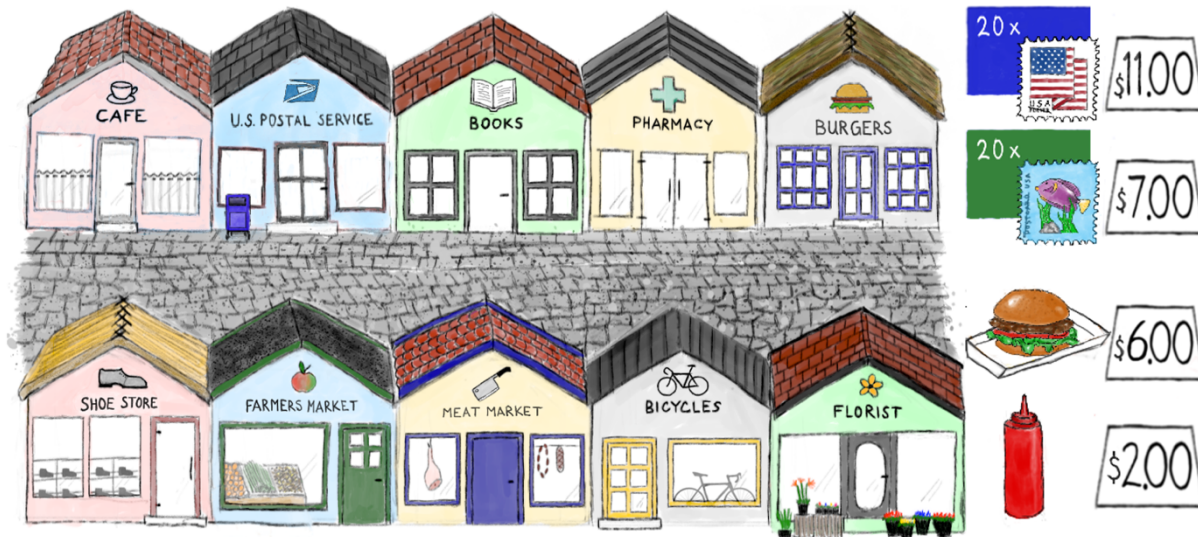


Figure 2. The new shopping street from the Oxford Digital Multiple Errands Test – USA (OxMET-USA) including exemplar items on the right side of two types of stamps, a burger, and ketchup.

### SAM questionnaire

Findings on the SAM questionnaire revealed that 3 of the 5 students considered the sentence construction to be of superior quality, with 2 considering it adequate. All OTs reported the vocabulary in the adapted version to be of superior quality. Four OTs considered the cultural match and cultural imagery of the updated stimuli to be of superior quality and 1 considered them adequate. On a scale of 0 (Definitely not recommended) to 10 (Recommended without reservation), 2 OTs scored the updated OxMET 10, 2 scored 9 and the final OT scored the updated OxMET 8.

### DISCUSSION

We aimed to detail the adaptation of the psychometrically validated Oxford Digital Multiple Errands Test (OxMET) for a North American population. Occupational therapists, those most likely to adopt and use the OxMET tool, first assessed the OxMET for changes regarding stimuli to reflect North American culture. This resulted in adapted stimuli and names of items and shops more commonly used in the USA. When the OxMET was adapted, the occupational therapists then reviewed the finalised version and rated it for cultural relevance using the SAM questionnaire, which revealed adequate-superior quality of our adaptation.

### CONCLUSION

The North American cultural adaptation of the OxMET was completed with new shopping street design and stimuli which keeps the same style and placement of items and shops to enable lower confounds between cultural versions. Future research will include normative data collection and validation of the OxMET-USA. Once normed and validated we envisage the OxMET-USA as a useful tool for assessing executive functioning in clinical populations.

### REFERENCES

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