

Mid-event object states are represented when comprehending sentences in perfective aspect



Background

During **event comprehension**, we track and represent changes to event participants (objects) over time.¹

- Events described by telic state-change predicates in **perfective aspect** activate representations of objects in their event-initial (empty cookie jar) and event-end (filled cookie jar) states.^{2,3}
- Intermediary states (partially filled cookie jar) are activated by **imperfective aspect**.^{3,4}

TP
TENSE AspP
PERF AspP*
IMPERF VP
peel the orange

Perfective aspect
external and complete perspective on the event

- Jasmine filled the cookie jar.
- Jasmine has filled the cookie jar.

VS. **Imperfective aspect**
internal and ongoing perspective on the event

- Jasmine was filling the cookie jar.

Research Questions

- Do we represent intermediary states while comprehending sentences in perfective aspect?
- Does the present perfect pattern more similarly to the simple past or to the participle?^{6,7,8}
- Are all object states activated to the same extent in perfective aspect conditions?

Methods

Participants: Monolingual native English-speaking adults recruited via Prolific (Exp 1: N=276; Exp 2: N=283; Exp 3: N=287)

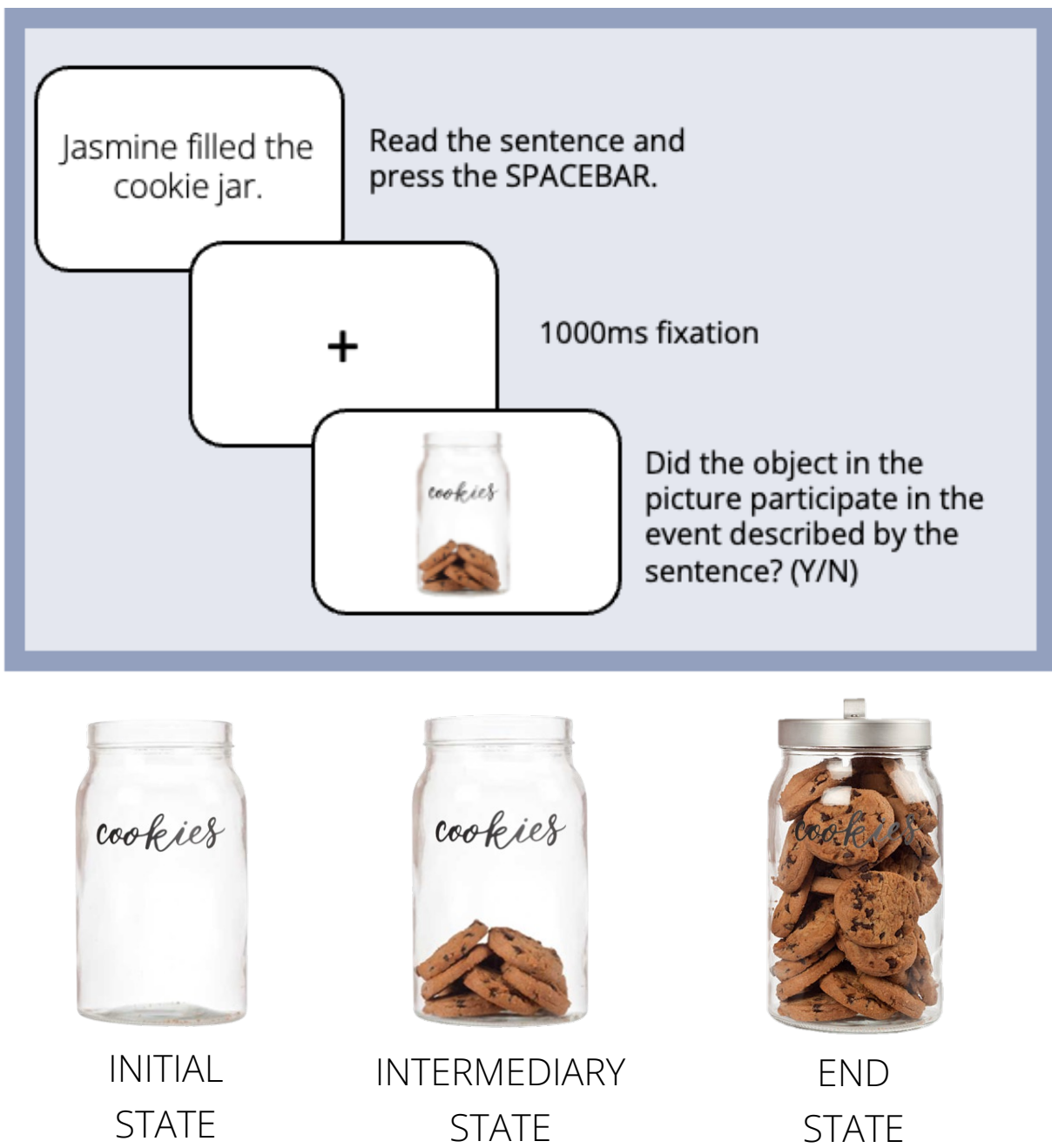
Procedure: Sentence-Picture Verification task administered online via Gorilla

Stimuli: 60 target telic external change-of-state predicates (V+DP), 120 images; 60 fillers

Picture conditions: End state images were rated as more typical in an offline norming task.

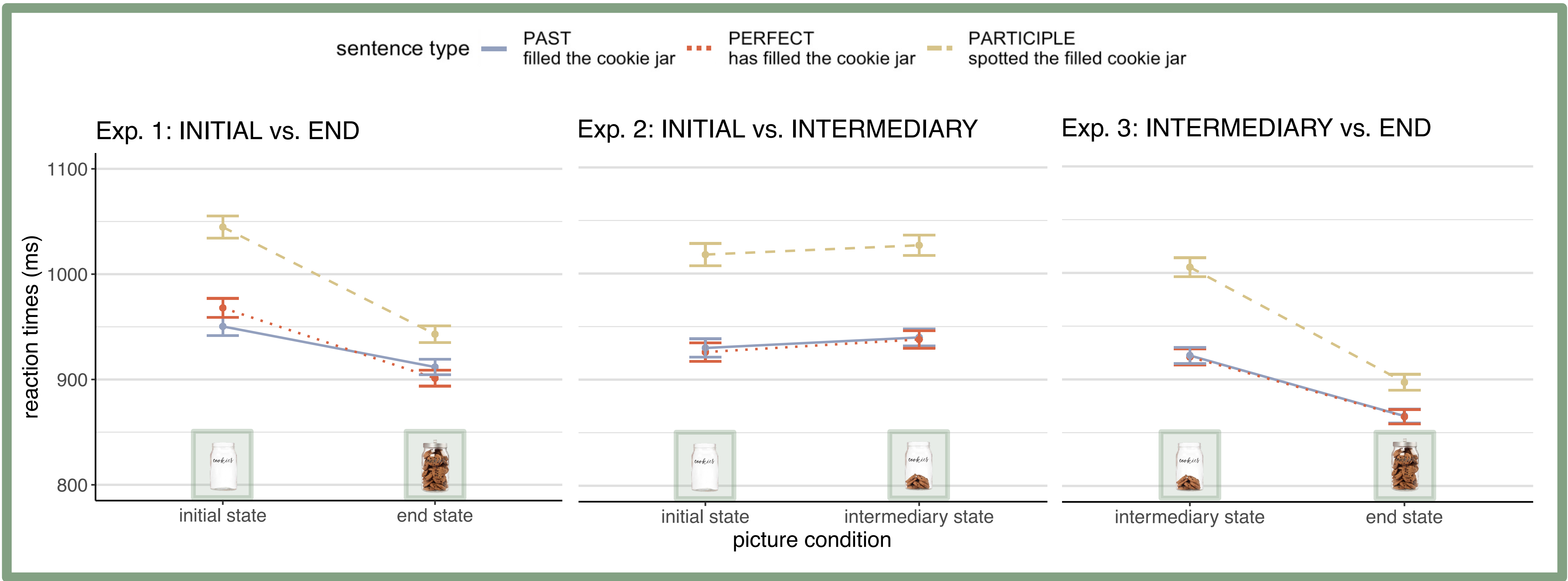
Sentence conditions:

- Jasmine **filled** the cookie jar.
- Jasmine **has filled** the cookie jar.
- Jasmine spotted the **filled** cookie jar.



SIMPLE PAST [PERFECTIVE]
PRESENT PERFECT [PERFECTIVE]
RESULTATIVE PARTICIPLE

Results



Reaction times to **intermediary states** were significantly faster after perfective conditions than after the participle.



No significant difference was found between **present perfect** and simple past. Both of these perfective conditions differed from the participle.



End states differed significantly from initial and intermediary states; there was no difference between initial and intermediary states.

Discussion

- Intermediary states** of objects are represented even when events are described using perfective aspect.
This suggests that object states as they appear throughout an entire event are represented during sentence processing.
- The **present perfect** and the simple past show the same pattern of object-state activation.
Neither perfective aspect condition appears to modulate object state activation, the way the participle (at the verb phrase level) does.
- End states** are more accessible in perfective aspect than initial and intermediary states.
Though initial and intermediary states are activated, they do not have the same representational status as end states.

	predicates	images	predicates	images
Example stimuli	empty the bottle		pitch the tent	
	husk the corn		open the umbrella	
	pack the suitcase		scratch the lottery ticket	

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