The Naturalness of Events

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Sentences communicate discrete events or ongoing states to listeners. Contemporary generative syntactic theory proposes 'little *v*' ('CAUS') functional morphology, situated above the verb phrase (VP). Little *v*, which is pronounced in some languages other than English, projects sentence event structure [10;11;12;14]. Until now, psycholinguistics has neglected this development [11]. Theory suggests little *v* designates events and states, the eventive variety projecting an external *agent* or *causer* thematic subject in active voice; the stative projecting an internal *theme* subject in passive voice [1;7;12]. This analysis inspects this theory, presenting a unique psycholinguistic examination of event varieties, voices, and thematic roles through subject-experiencer (SE) and object-experiencer (OE) sentences. A near ubiquitous claim is that all active and passive SE sentences are stative [4;6;12;13], and some theorists have claimed that a subtype of OE actives also are [3;9;12;19]. However, little prior experimental attention has been directed to a second, eventive OE active subtype [3;5;9;12], nor to the possibility that OE event type may vary with interpretation [3;19]. Additionally, passives formed from stative and eventive actives are regarded as stative [1;7;9;12], despite ambiguous proposals of eventive passive subtypes [9;12]. We explore event varieties through several measurements. Since statives are not expected to contain *agent* subjects, we present participant ratings of agency/intent. Additionally, theory proposes stative passives are less natural [12], suggesting they should be rated less natural than passives formed from eventive actives, with an *agent* object, and from stative actives, with no *agent*.

Method: 248 SE and 254 OE actives (NP1 V NP2) and passives (NP1 *was* V *by* NP2) were classed as eventive if they contained an *agent* judged by crowdsourced American-English-speakers (AE:N=68) on a Likert scale ranging from *no intent–strong intent*; and stative if no *agent* was identified [3;9;16]. Independently, Australian-English undergraduates (AuE:N=63) classified the same OE sentences via the same method [15]. This latter categorisation allowed finer distinction in event types since its ratings were instantaneous rather than averaged across OE verbs that may have potentially varying interpretations. An unrelated group of 27 AE rated the naturalness of the same SE and OE sentences on a Likert scale that ranged from *very unnatural–very natural* (-2–2). AE sentences included proper nouns, AuE, common nouns and an added PP.

Results: Despite claims that OE passives are universally stative, OE passives featuring verbs participants characterised as stative were rated less natural than those they characterised as eventive, when averaged across varying interpretations, consistent with naturalness predictions, but were not necessarily less natural than their actives. However, when split into more accurate "High" (eventive) and "Low" (stative) instantaneous ("labile") interpretations of agency, eventive OE passives were rated less natural than their actives, with stative OE passives rated more natural than their actives, contrary to predictions. Finally, in conflict with further suggestions of universal stativity, stative SE passives were rated less natural than eventive SE passives, however, both eventive and stative SE passives were less natural than their actives (Figure 1).

Conclusion: Tiered little *v* functional morphology (Figure 2) suggested for other languages [8;17], would allow for independent assignment of event type, thematic roles, and voice, to permit the necessary variations in English sentence events (Table 1). An external *agent* subject (and internal *agent* passive object) in an eventive interpretation of an emotional state, is suggested for some SE and OE events, which for SE is considered more natural than a stative interpretation. Stative adjectival OE passives (aP: "Low" [2;3;9;12]) are considered more natural than stative ("Low") OE actives when both lack an *agent*, instead fronted by an external *experiencer* subject that is also suggested for stative SE actives. Sentence naturalness appears driven by event prototypicality as well as event type, since external arguments were generally more natural regardless of thematic identity, and OE sentences were more natural than SE sentences. Rather than a *causer* thematic subject, little *v*/CAUS may project causal aspect characterising a prototypical cause-effect event progression, increasing perceptions of naturalness [5;18].
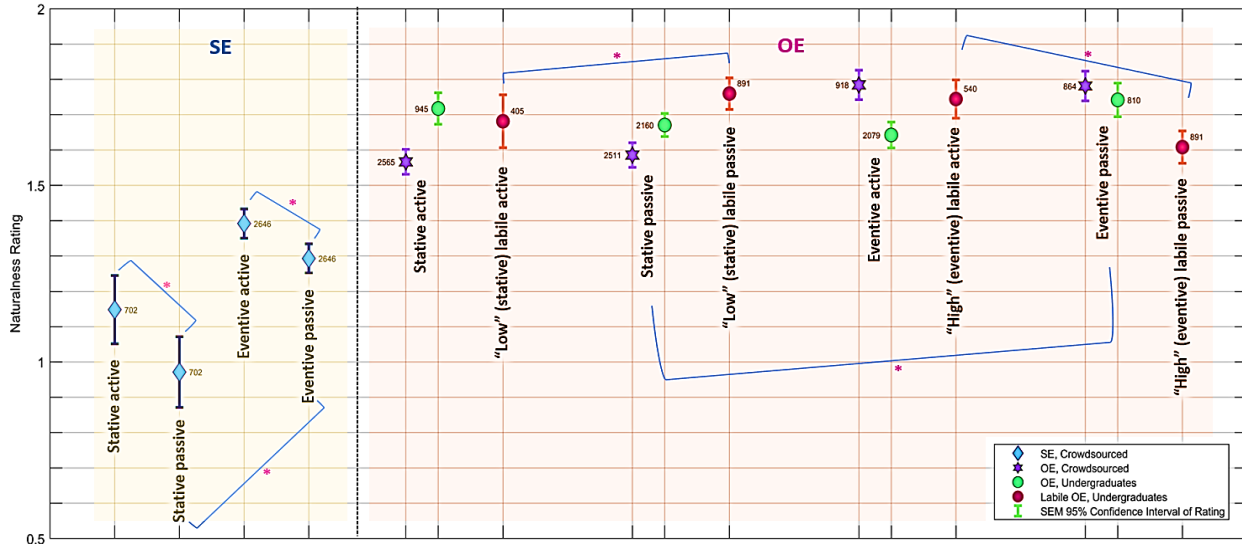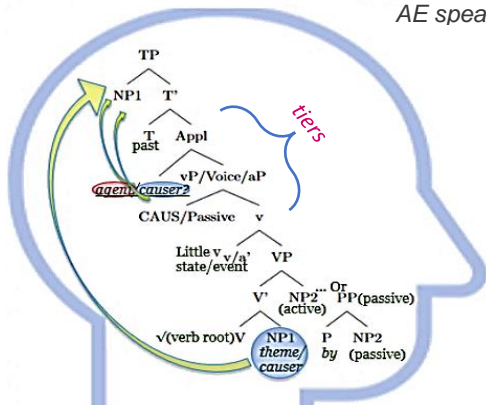
Figure 1. Naturalness Ratings of SE and OE Actives and Passives, Separated Into Subtypes via Crowdsourced AE speakers and Undergraduate AuE Speakers.

Figure 2. Tiers of Applicative, Voice and little v, to account for English Sentence Variations.

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SE/Stative/Labile	*'The announcer/George feared/agitated the runner/William (in the thin jacket)'*	
(experiencer/causer/theme)	*'The vampire/George was feared/agitated by the runner/William (in the thin jacket)'*	
Agentive	*'The artist/Henry appreciated/provoked the creator/Robert (of the epic tragedy)'*	
(agent)	*'The alien/Henry was appreciated/provoked by the creator/Robert (of the epic tragedy)'*	

Table 1. Sentence examples in each cluster

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