The role of Animacy in relative clause production: Eye-tracking evidence
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Studies of single-clause sentence production show that noun animacy influences speakers’ active vs. passive structure choices: the conceptual salience of animate nouns makes them more accessible and more likely to be sentential subjects than inanimate nouns, irrespective of thematic role [1].

Here we investigate the role of noun animacy in production of relative clauses (RCs). We recorded speakers’ eye-movements while they answered questions about scenes. Scenes showed e.g., a woman (woman 1) punching a bald man (man 1), and another woman (woman 2) punching an orange bag (bag 1). Questions about the patient/theme of an action (e.g., who is bald, what’s orange?) required qualifying RCs like (a)-(d) because of the presence of contrast characters in the scene (bag 2, man 2). Participants freely inspected the scene for 3 sec. before hearing questions and answering them.

Examples
(a) Animate-Head, Passive: The man that’s being punched by the woman.
(b) Animate-Head, Active: The man that the woman is punching.
(c) Inanimate-Head, Passive: The bag that’s being punched by the woman.
(d) Inanimate-Head, Active: The bag that the woman is punching.

Animate-head RCs were overwhelmingly passive (98%). Inanimate-head RCs were 60% passive (c), 40% active (d). This asymmetry follows from accessibility: animate-heads (conceptually and topically salient) are made the subject of the RC-verb, yielding passives. However, we found that similarity between event-characters also correlates with active/passive choice: animate-head RCs contained conceptually more similar nouns (man-woman) than inanimate-head RCs (bag-woman). We hypothesized that competition between conceptually similar animate entities modulates noun accessibility and production planning (cf. [2]), as animates typically play similar semantic-syntactic roles. If so, competition should yield more frequent looks to named and unnamed utterance-relevant characters in animate-head than inanimate-head RCs, even when the same structure is produced. We thus compared across animacy conditions: (a) vs. either (c) or (d), and also examined the structure effect in (c) vs. (d). Below, we report looks from the first fixation on the focused character after hearing the question to speech onset.

Participants fixated the animate character to be named (bald man) in planning the man that’s being punched… in (a) more often than they fixated the inanimate character (orange bag) in planning the bag that… in (c) or (d) (p<.05). Moreover, in planning inanimate-heads (c)-(d), participants fixated more on the orange bag to be named in passives than actives. This suggests that planning the structure or retrieving the first noun was difficult in passive structures, but more so with animate-head passive RCs.

As predicted, before speaking participants also fixated more on unnamed characters in animate-head passive RCs than in inanimate-head RCs (c) or (d): participants fixated on the agent woman 1 and the contrast character (man 2) in planning the man that’s being punched… more often than they fixated on the corresponding agent and contrast characters in planning the bag that… (woman 2/bag 2) (all ps < .05). These looks were not due to the presence of more people in the scene, as they were utterance-relevant: in (a), participants fixated on woman 1 but did not fixate on the utterance-irrelevant woman 2.

Overall, the data suggest an important role for competition in noun accessibility and structure choice in sentence production. We discuss implications for accounts of accessibility and structure planning in multi-clause sentence production.

References