

**Referential form production in Vietnamese: Effects of Modality and Topicality**

Traditionally, work on pronoun resolution (e.g. Givón, 1983; Ariel, 1990; Gundel et al., 1993) has concluded that highly salient referents are referred to with reduced referential forms (e.g. pronouns) compared to less salient referents which are referred to with less reduced, more informative forms (e.g. NPs). It has been claimed that factors such as topicality and subjecthood increase referent salience (e.g. Chafe, 1976; Crawley and Stevenson, 1990). We report two studies on Vietnamese which aim to shed light on open questions regarding the division of labor between null/overt pronouns and potential differences between spoken and written language production.

**Prior work on referential form** has led to divergent results: In Romance languages that exhibit *pro*-drop and have both null and overt pronouns, prior work found that null pronouns tend to refer to subjects and overt pronouns to objects (Carminati, 2002, Alonso-Ovalle et al., 2002). In contrast, languages regarded as *topic*-drop languages have failed to yield such a clear division of labor between null and overt pronouns. For example, in Chinese and Japanese (e.g., Simpson et al., 2015, Ueno et al., 2016), both null and overt pronouns prefer subjects. Thus, on the crosslinguistic level, the properties of null and overt pronouns are not yet fully understood.

**Prior work comparing spoken vs. written modalities** has not specifically investigated the referential biases of null/overt pronouns. However, on a general level, it has been observed that *spoken language contains relatively more pronouns, relative to nouns, than written language* (Tannen, 1982; Chafe, 1985) – but this may be an artifact stemming from the complexity of written genres. Specifically, Biber et al. (1999) note that spoken language often involves fewer referents than written language and thus pronouns are less ambiguous (and can be more often used) in spoken language. Consequently, it is unclear whether the higher rate of pronouns in spoken language is a meaningful difference between the modalities, or just an epiphenomenon.

**Aims of this work:** We conducted two experiments looking at production of null pronouns, overt pronouns and NPs in Vietnamese, in order to investigate whether (i) *referent topicality* and (ii) use of the *spoken vs. written modality* influence choice of referential form.

**Experiments.** Adult native Vietnamese speakers participated in written (n=24) and spoken (n=36) sentence completion tasks. In the written task, participants read sentence fragments (ex. (1a-b)), and wrote continuations. In the spoken task, new participants read the same fragments and continued them verbally: They said aloud both the provided fragment/prompt and their continuations. (The fragments were shown on the screen the whole time, to avoid memory load.) The discourse properties and number of referents in the written and spoken prompts were identical, and each fragment consisted of two same-gender characters.

To manipulate *referent topicality*, we compared active vs. passive sentences. Passives are known to mark the syntactic subject as the topic (e.g. Davison, 1984; Rohde et al., 2014). To control for coherence effects, we used the connective *vì* ‘because’ and equi-biased verbs (adapted from Hartshorne & Snedeker, 2013). Thus, from a semantic perspective, the subject and object are approximately equally likely to be mentioned next. Participants’ continuations were coded for (i) likelihood-of-mention (do people start their continuations by referring to the preceding subject or object antecedent?), and (ii) choice of referring expression (null pronoun, overt pronoun, NP).

(1a) <i>Active</i>	Ông kĩ sư cảm ơn ông lái xe vì ... male.engineer thank male.driver because 'The engineer thanked the driver because ...'
(1b) <i>Passive</i>	Ông kĩ sư được ông lái xe cảm ơn vì ... male.engineer PASS male.driver thank because 'The engineer was thanked by the driver because ...'

**Results: Likelihood-of-mention:** Continuations mostly start with reference to *preceding non-agents* (objects in actives, subjects in passives) in both spoken and written tasks (Fig.1). Crucially, the preference to mention the non-agent is *stronger in passive conditions* in both modalities ( $p's < .05$ , lmer), confirming that passivization marks topicality. **Referential form choices** also show an active/passive asymmetry. Generally, when we consider *the referential forms used for the most-frequently continued-with entity* (the **non-agent**, object in actives and subject in passives), we find a significant overall difference in how frequently the three different referring expressions are used for non-agents in actives vs. passives. This holds for both written and spoken tasks ( $p's < .05$ ). However, a closer look at the use of pronouns vs. NPs when referring to the non-agent reveals **differences between the modalities**: (i) In the **spoken task**, people use more pronouns (null and overt combined), relative to NPs, in *passive* ( $p < .05$ ) but *not in active conditions* when referring to the non-agent, but (ii) in the **written task**, people use more pronouns, relative to NPs, in *both* passive and active conditions ( $p's < .05$ ). Regarding null vs. overt pronouns, no difference was found in active conditions. However, null pronouns were used significantly more than overt pronouns for *non-agents in passive conditions* (written:  $p < .001$ , spoken;  $p < .05$ ).

Indeed, the spoken task generally elicited more NPs, relative to pronouns, than the written task ( $p < .001$ ). Furthermore, the spoken task yielded more NPs than pronouns for *non-agents* in both active ( $p < .05$ ) and passive ( $p < .001$ ) conditions. The higher rate of NPs in the spoken modality may stem from (i) cognitive sources (potentially greater competition between referents in the spoken task, see Arnold & Griffin, 2007) or from (ii) methodological differences (e.g. effort needed to type a full noun vs. less effort needed to say a full noun).

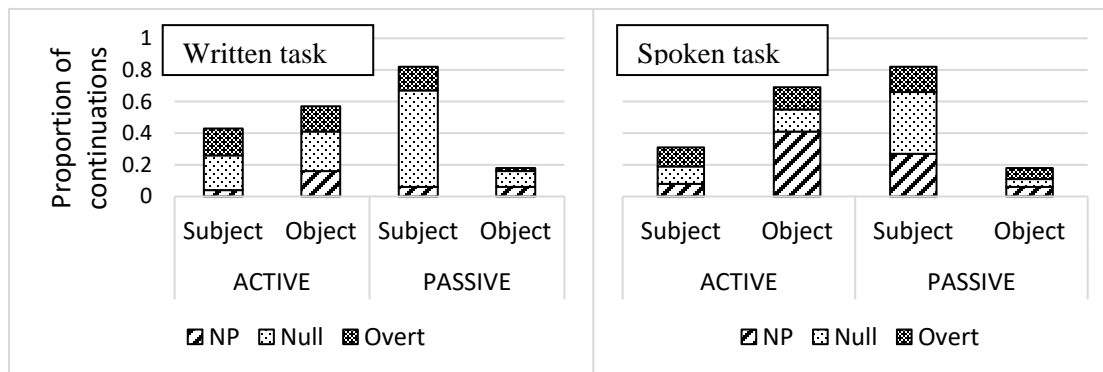


Fig1. Effects of modality (written/spoken) and topicality (act/pass) on referential form production

This work does not aim to offer an explanation of why the asymmetry exists. What is more important here is that – since the number of referents in the written and spoken tasks was identical -- the increase of NPs in the spoken task cannot be attributed to differences in the number of referents and resulting different degrees of ambiguity. Thus, our findings suggest that prior findings about pronouns being more common in spoken language may be epiphenomenal. In sum, we find that both topicality and modality influence production of referential form in Vietnamese. Although the division of labor between null and overt pronouns are not clear in active conditions, null pronouns are the preferred form in passives as a result of topicality.

**SELECTED REFERENCES** ||Alonso-Ovalle et al. (2002). Null vs. overt pronouns and the topic-focus articulation in Spanish. ||Ariel (1990). Accessing NP antecedents. ||Arnold et al. (2007). The effect of additional characters on choice of referring expressions. ||Biber et al. (1999). Grammar of spoken and written English. ||Rohde et al. (2014). Grammatical and information-structural influences on pronoun production. ||Ueno et al. (2016). Grammatical and pragmatic factors in the interpretation of Japanese null and overt pronouns.