At the syntax-pragmatics interface: a quantitative study of aspect in locative inversion

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Introduction. Locative inversion in English is a noncanonical construction in which a PP appears sentence initially, and the notional DP subject appears post-verbally (e.g. *In the doorway stood a wizard*). This construction is pragmatically marked, requiring the post-verbal DP to be "introduced" to the scene, and receive presentational focus (Bresnan 1994:85; Birner 1994:238; Kay & Michaelis 2017:1; a.o.). It is also subject to a variety of other syntactic and pragmatic constraints, as summarized in (1).

(1) a. **Intransitivity**: Into the room walked a wizard. / *Into the room threw a wizard a dove.
b. **Negation**: #Into the room didn't walk a wizard.
c. **Polar questions**: #Did into the room walk a wizard?
d. **Irrealis moods**: #Into the room might walk a wizard.
e. **Non-simple aspect**: #Into the room had walked a wizard./ #Into the room was walking a wizard.
f. **Definiteness effects**: Into the room walked a wizard. / #Into a room walked the wizard.

The phenomenon of locative inversion has been studied extensively in the syntactic English literature. Even within a single framework, such as minimalism, many syntactic analyses have been proposed, allowing for the mediation of pragmatic factors to greater or lesser extents (see Bruening 2010; Doggett 2004; Rizzi & Shlonsky 2006 for a demonstration of this variation). Contra the majority of minimalist approaches to the construction, I argue that the only truly syntactic constraint is that requiring intrasitivity, as given in (1a). The constraints in (1b-f) are pragmatically motivated and result in infelicity rather than ungrammaticality, as indicated by the "#". These five pragmatic restrictions can be subsumed under a single constraint which I call the Discourse Immediacy Constraint given in (2).

(2) **Discourse Immediacy Constraint**: A locative inversion construction is only licensed in a discourse where a character is introduced to the immediate center of discourse at reference time.

I define the immediate center of discourse as the deictic center, that is "on scene" in the narration. This dependence on a deictic center can be demonstrated by the relative infelicity of "go" when compared to "come". As shown in (3), when the character is interpreted as entering the scene (3a), locative inversion is permitted. However, when one is forced to interpret the character as exiting the scene (3b), infelicity arises. Most importantly, (3c) shows that when the verb is not deictic, as with "walk", the default interpretation is that the character is exiting some non-central room and entering the discourse center.

(3) a. Out of the room came a wizard.
b. #Out of the room went a wizard.
c. Out of the room walked a wizard.

Despite the large literature on the topic, next to no quantitative work has been done on locative inversion in English. In the present study, I begin to fill this gap by collecting grammaticality judgements outside of the linguistic community. I then use this data to argue that a minimal syntactic analysis, mediated heavily by pragmatic factors, is preferred over one that errs on the side of syntactic-only explanations.

Methods. I conducted a grammaticality judgement survey to specifically test the effects of aspect on the acceptability of locative inversion sentences (i.e. the infelicity demonstrated in (1e)). The test sentences varied along three dimensions: Tense (past vs. present), Verb Type (positional vs. directional), and Aspect (simple vs. progressive vs. perfective). This resulted in 12 tokens per token set, and 144 test sentences total.

172 participants were included in the final dataset, resulting in 2088 tokens. All participants were recruited from mTurk and compensated $1.00 for their participation. The survey was fully counterbalanced, and used fillers that were also pragmatically marked (e.g. it-clefts) in order to discourage any meta-linguistic awareness on behalf of the participant as to the target sentences. The data was then analyzed using a mixed effects linear regression model, with Participant and Token Set as random effects, and Tense, Aspect, and Verb Type as fixed effects.

Results. All three main effects, Verb Type ($p<0.001$), Tense ($p<0.01$), and Aspect ($p<0.001$), were significant. Moreover, there was a significant interaction between Verb Type and Aspect ($p<0.001$).

The first of two post-hoc tests showed that of the three levels of Aspect, Simple aspect was judged as being the most acceptable with a mean rating of 4.70 across verb and tense types. Target sentences involving both perfective and progressive aspects negatively impacted the score, with mean ratings of 3.22 and 3.19 respectively. The difference between these was not significant. Results are shown in Figure 1.

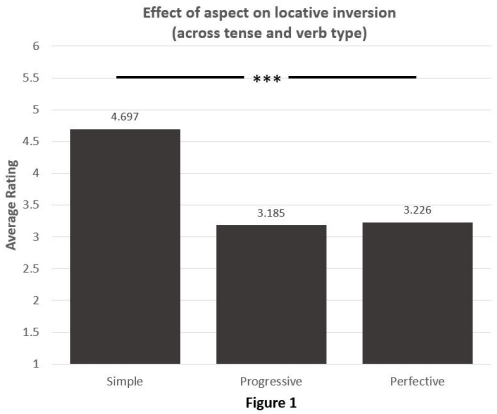

Figure 1

The second post-hoc test looked at the interaction between Aspect and Verb type. As shown in Figure 2, sentences with Simple Aspect were judged as significantly better than the other two Aspect levels, regardless of Verb Type. Interestingly, however, for directional verbs (left three columns), sentences with perfective aspect were judged as significantly better than those with progressive aspect (e.g. *Into the room had walked a wizard* > *Into the room was walking a wizard*). The opposite was true for Positional verbs (e.g. *In the room was standing a wizard* > *In the room had stood a wizard*).

Discussion. One could attempt to solve the strong preference for simple aspect syntactically by stipulating an incompatibility of PP fronting and additional voice heads between T and V. However, this line of reasoning becomes cumbersome once one considers the interaction between verb type and aspect in grammatical acceptability. I argue that the difference in behavior between Positional and Directional verbs (e.g. *stand* vs *walk*) is a result of different aspectual requirements in satisfying the Discourse Immediacy Constraint as given in (2). The presence of a referent using a positional verb holds across time, resulting in relatively high felicity of progressive aspect. The presence of the referent when using directional verbs, on the other hand, necessarily involves the completion of the event, thus making the perfective aspect more felicitous.

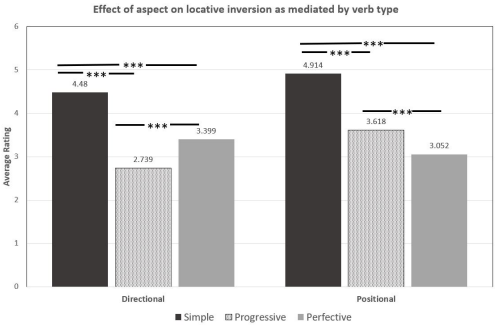

Figure 2

The difficulty of finding a syntactic solution to account for the above results suggests that a pragmatic constraint is necessary to account for the distribution of locative inversion in English. The Discourse Immediacy Constraint presented here concisely accounts for this data, and can be extended to straightforwardly account for the infelicity of locative inversion with polar questions, negation, and irrealis mood, none of which confirm the presence of a character "on the scene" at reference time. From this I argue that a syntactically-minimal analysis of locative inversion is preferable to one in which accounting for these constraints requires the introduction of additional syntactic mechanisms.

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