The correlation of syntactic form with discourse function has become a central research area in linguistic pragmatics and discourse analysis. Most studies have proceeded on a construction-by-construction basis, failing to note significant generalizations across sentence types. One significant exception identifies a set presuppositional constructions in English that mark an "open proposition" in discourse as salient shared knowledge. This generalization is applied here to the class of inversion constructions. An inversion is a sentence in which the logical subject noun phrase appears in the post-verbal position. It is proposed that two semantically distinct types of inversion exist, corresponding to two distinct discourse functions. Non-locative inversion serves to mark an open proposition as salient shared knowledge in the discourse, and locative inversion serves to present relatively familiar information in subject position. Moreover, the fact that locative inversion does not require a salient open proposition suggests that the two inversion types may have distinct syntactic representation as well. A brief bibliography is included. (MSE)
A Semantico-Pragmatic Taxonomy of English Inversion

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Introduction

The correlation of syntactic form with discourse function has become a central research area in linguistic pragmatics and discourse analysis (e.g. Beusinger 1972, Green 1980, Horn 1981, Kuno 1986, Prince 1983, Thompson 1983, Ward 1985, Ziv 1981). However, most studies have proceeded on a construction-by-construction basis, failing to note significant generalizations across sentence types. An important exception is Prince (1986), who identifies a set of presuppositional constructions in English which serve to mark an "open proposition" in the discourse as salient shared knowledge. In this paper, we apply Prince's generalization to the class of inversion constructions, illustrated in 1.1

1.1a. Down the stairs flew Cinderella.
    b. On the back porch is a cord of wood for the fireplace.
    c. Also voting against the President's proposal was Senator Paul Simon of Illinois.

Based upon our investigation of inversion and open propositions, we posit the existence of two semantically distinct types of inversion, corresponding to distinct discourse functions. This semantic distinction will be shown to be relevant to other linguistic phenomena as well.

Prince's generalization

Open propositions, or CPs, represent that part of the propositional content of an utterance that constitutes presupposed or BACKGROUNDED information, i.e. information which the speaker believes his/her hearer shares at the time of the utterance. An OP is obtained by replacing the element bearing nuclear accent with a variable whose instantiation corresponds to the new information, or FOCUS, of the utterance (Wilson and Sperber 1979, Prince 1981a, Ward 1985). Prince (1986) argues that CP-marking constructions constitute a natural class on syntactic grounds in that they all contain a trace; this trace may either be a) dominated by VP or b) coindexed with the constituent bearing nuclear accent.

Constructions of the first type -- containing a VP-dominated trace -- include topicalization (from within VP), VP preposing, and gapping. Consider, for example, the VP preposing in 2a, and the topicalization in 3a:

(2)a. They claimed John would pass his exams and pass he DID [e].
  b. He X pass.
(3)a. John wants to see "Casablanca" tonight. "The African Queen" he wants to see [e] TOMORROW.
  b. John wants to see [Bogart movies] at time X.

In the VP preposing in 2a, the trace is coindexed with the VP [pass]. The CP in 2b is obtained by replacing the accented constituent (did) with an affirmation/negation variable. This CP ('John did or did not pass') is clearly salient in the context given. In the topicalization in 3a, the trace is an NP dominated by the VP [wants to see [e] tomorrow]. The CP in 3b is obtained by
replacing the accented constituent (tomorrow) with a temporal variable. Note that the information represented by the sentence-initial constituent of topicalization need not be explicitly evoked in the discourse. For example, "The African Queen" is only implicitly related to the set of Bogart films; this set is evoked by the set-member "Casablanca" contained in the prior discourse, and constitutes part of the CP which the speaker in 3 can assume to be shared knowledge. (For a discussion of the kinds of relations that can hold between the referent of the preposed constituent and other discourse entities, see Prince 1981a, Ward 1985, Ward & Prince to appear.)

Constructions of the second type -- containing a trace bound to the constituent bearing nuclear accent -- include (stressed-focus) it-clefts, wh-clefts, Yiddish-movement, and focus-movement. These constructions are illustrated in 4-5:

(4)a. It's in JUNE that John is leaving [e].
    [it-cleft]
   b. A: John's leaving in May, right?
     B: No. In JUNE he's leaving [e].
     [focus-movement]

(5)a. What John wants [e] is a TOYOTA. [wh-cleft]
   b. A: Have you talked to John lately?
     B: Yes. A TOYOTA he wants [e] (yet).
     [Yiddish-movement]

In each of these examples, the trace is coindexed with the constituent bearing nuclear accent, corresponding to the focus of the utterance. Note that these constructions need not involve a VP-dominated trace (e.g. 4a-b), just as those in 2-3 need not involve one coindexed with the accented constituent; however, the
CPs associated with both types of constructions are obtained in the same way.

As Prince observes, not all gap-containing constructions mark an OP as salient shared knowledge. Consider the preposed PP in 6a, and the informative-presupposition (IP) it-cleft in 7a:

(6)a. In the back yard I saw a squirrel attack a pigeon [e].
   b. I saw a squirrel attack a pigeon at location X.

(7)a. It was ten years ago today that Iranian students stormed the U.S. Embassy in Tehran and took 68 hostages [e].
   b. Iranian students stormed the U.S. Embassy in Tehran and took 68 hostage at time X.

Prince points out that adverbial preposings such as 6a do not serve to mark an OP as salient shared knowledge, despite the presence of a trace. Indeed, as noted in Ward 1985, a sentence like 6a can be felicitously used as a discourse-initial utterance without the speaker’s assumption that the corresponding OP (e.g. 6b) constitutes shared knowledge. The IP it-cleft in 7a similarly fails to mark an OP as shared knowledge. As argued in Prince 1978, the very function of such clefts is in fact to inform the hearer of this 'presupposed' information. Such clefts are distinguishable from the OP-marking stressed-focus it-clefts in that the trace of an IP it-cleft need not be coindexed with the accented constituent. The difference between the adverbial preposing in 6a and the topicalization in 3a is that 3a involves a VP trace, while 6a does not.

In light of these differences, Prince (1986:214) offers the following generalization:
Those constructions in which the gap is bound by the tonically stressed constituent or something coreferential with it—Stressed-Focus IT-Clefts, Focus-Movement, and Yiddish-Movement—always mark an CP as shared knowledge. Those constructions in which the gap is not bound by the tonically stressed constituent or something coreferential with it mark an CP as salient shared knowledge just in case the gap is a VP, as in VP-Preposing, or is dominated by VP...[3]

Given this correlation, we can predict the existence of a salient OP for any sentence containing a VP-dominated trace, and given the absence of such an CP, we can predict the absence of such a trace.

Open propositions and inversion

An examination of a large corpus of naturally-occurring data reveals that at least one construction traditionally analyzed as involving a VP trace does not seem to require a salient OP for felicity. Consider the inversions in 8-9:

(8)a. There are three ways to look at East State Street Village, a low-income apartment complex in Camden. None of them are pretty views. To the west of the 23 brightly colored buildings flows the Cooper River, a fetid waterway considered one of the most polluted in New Jersey. [Philadelphia Inquirer, p. 1-E, 5/7/84, beginning of article "Apartment dwellers caught in legal tangle"]

b. X flows somewhere.

(9)a. At a gap where wheeled vehicles have been driven through he stands surveying the cluster of buildings below him—barn and house, asbestos-sided chicken house and slat-sided corn crib, both disused, and a newish building of cement-block with a roof of corrugated overlapped Fiberglas. Some kind of garage, it looks like. On the house roof has been mounted a copper lightning rod oxidized green and an H-shaped television aerial, very tall to catch the signals out here. [Updike 1981:11]
b. X has been mounted at some location.

If 8a involves a VP-dominated trace, then the CP in 8b is predicted to be salient shared knowledge at the time 8a is uttered. However, 8b seems unlikely to be salient on the basis of the prior discourse in 8a; the mention of a Camden apartment complex does not, in itself, evoke the proposition that something flows somewhere. Similarly, in 9a, the description of the house and garage seems insufficient to render the CP in 9b salient, since clearly the mere mention of an entity does not in itself render salient the proposition that entities are in locations—much less mounted in locations. Thus, it would appear that either the inversions in 8-9 do not involve a VP-dominated trace, or else such inversions are exceptions to the form-function generalization proposed by Prince.

Interestingly, an examination of the same corpus reveals that whenever an inversion involves no clearly salient CP, its initial constituent is semantically locative or directional.[4] This and only this semantic class of inversion (henceforth LOCATIVE INVERSION) does not require a salient CP for felicity. All other semantic types of initial constituents do in fact require a salient CP for felicitous inversion. Consider the inversions in 10-11:

(10)a. After delivering two rulings Thursday, the high court recessed until Monday, when it is expected to release the remaining decisions of the 1988-89 term. Still to be announced is the justices' resolution of an abortion case that has attracted more attention in recent years than any other case on the court's docket. [Chicago Tribune, sec. 7, p. 5, 6/30/89]

b. The Supreme Court met Thursday to discuss the controversial issue of abortion. Still to be announced is the justices' resolution of an
abortion case that has attracted more attention in recent years than any other case on the court's docket. [cf. The justices' resolution ... is still to be announced.]

(11)a. We're in the offices of the Capitalist Reporter, a sixty-four-page monthly tabloid. It's in one of the older office buildings along a mid-Manhattan street. Though the quarters are cramped, an air of busyness pervades. **At work, among half-filled paper coffee cups and ash trays, higgledy-piggledy, are several young people, long-haired, casually dressed.** [Terkel 1974:583]

b. We're in one of the older buildings along a mid-Manhattan street. **At work, among half-filled paper coffee cups and ash trays, higgledy-piggledy, are several young people, long-haired, casually dressed.** [cf. Several young people, long-haired, casually dressed, are at work...]

The context in 10b is insufficient to render salient the CP 'Something is to be announced', hence the infelicity of the inversion. However, when the CP is salient, as in 10a, the inversion is well-formed. Similarly, the inversion in 11a is felicitous given the salience of the CP 'Somebody is at work'; 11b, in the absence of this CP, is infelicitous. It is clear that the difference between the initial constituents in 10-11 and 8-9 above is a semantic -- not a syntactic -- one, since both groups include PPs, as seen in examples 5 and 7.

Thus we see that all and only non-locative inversions require a salient CP for felicity.[5] On the basis of this semantic and pragmatic evidence, we posit two distinct classes of inversion -- locative and non-locative -- with distinct discourse functions.

The function of locative inversion
While non-locative inversion has been shown to mark an CP as salient in the discourse, it remains to be seen what function is served by locative inversion. It has long been noted that a correlation exists between the position of an NP in a sentence and the information status of the discourse entity to which the NP refers. However, as Prince (1981b) notes, a simple two-way division of information into 'given' and 'new' is inadequate. Consider 12:

(12) Backstage on opening night Wednesday at the Valley Forge Music Fair, where he is booked through Sunday, Wayne Newton, 41, is genial in his blue velvet smoking jacket. Slick and shiny as a pair of dice, his black hair gleams, and so do his Zorro mustache, his eyebrows, and his black patent-leather shoes. On one hand flashes a 14-carat round diamond; on the other hand sparkles an 8-carat stone flanked by the diamond-studded initials WN. [Philadelphia Inquirer, p. 1-D, 9/16/83, article "To the top the hard way"]

Here, the referent of the initial NP one hand in the inversion constitutes 'new information' in the sense that Newton's hand has not been previously mentioned in the discourse; yet it also constitutes 'given information' in that we can infer its existence based on the prior mention of Newton.

As an alternative to such a binary distinction, Prince (1981b) proposes a preliminary scale of 'assumed familiarity' to characterize the gradient nature of givenness and information status. Prince's scale orders the various information statuses from most to least familiar, as in 13:

(13) Evoked > Unused > Inferrable > Containing Inferrable > Brand-New Anchored > Brand-New
Briefly stated, 'brand-new' entities are those that have not been previously evoked in the discourse. A 'brand-new anchored' entity is a brand-new entity which is linked to another discourse entity referred to within the NP (e.g. this guy I know is linked to I). 'Unused' entities are familiar entities which have not been evoked in the current discourse. 'Inferrable' entities are those that the speaker believes the hearer can infer from entities already salient, as in 12; 'containing inferrables' are a special case in which "what is inferred off of is properly contained within the Inferrable NP itself" (1981b:236). Finally, 'evoked' entities are either explicitly evoked in the discourse ('textually evoked') or otherwise salient in the context of the discourse ('situationally evoked').

In addition, Prince posits a "conspiracy of syntactic constructions resulting in the nonoccurrence of NPs low on the scale in subject position" (1981b:247), including existential there, relative clauses, and certain left dislocations. Based on an examination of naturally-occurring data, Birner (in prep.) claims that locative inversion may represent another participant in this conspiracy.[6] As Birner notes, the initial constituent of locative inversion consistently represents more familiar information than does the post-verbal constituent. For example, consider 14a-b:

(14)a. After the gate (which was the only opening in the outer walls) a tree-lined avenue led to the abbatical church. To the left of the avenue there stretched a vast area of vegetable gardens and, as I later learned, the botanical garden, around the two buildings of the
b. On a small farm in the south of France lived a man, his wife, and his son. [Birner (in prep., ex. 1)]

In 14a, the definiteness of the NP in the postposed constituent (the Aedificium) is licensed by the fact that the Aedificium was mentioned five pages earlier; at the same time, the inversion is licensed by the fact that, as unused information, the Aedificium is less familiar than the gardens and church evoked in the preceding sentences. In 14b, the south of France represents an unused (but presumably known) entity, to which the brand-new entity 'a small farm' is anchored; thus, a small farm in the south of France, representing anchored information, is more familiar than the brand-new unanchored referent of a man, his wife and his son.

Thus, we see that locative and non-locative inversion are distinct not only semantically but pragmatically as well. [7] Locative inversion functions to keep less familiar information out of subject position, while non-locative inversion serves to mark an OF as salient shared knowledge in the discourse. Broadly stated, then, what is relevant for felicitous inversion in general is the (assumed) familiarity of certain information in the discourse: For locative inversion it is the relative familiarity of the information represented by the pre- and post-verbal constituents that determines felicity, while for non-locative inversion it is the salience of the relevant CP. [8]
Corroborating evidence

The distinction between locative and non-locative elements that we have posited here is not limited to inversion; the same distinction seems to hold for preposing as well. As noted in Ward 1985, locative PPs may also be preposed in the absence of a salient CP. Consider the locative PP preposings in 15:

(15)a. In the VIP section of the commissary at 20th Century-Fox, the studio's elite gather for lunch and gossip. The prized table is reserved for Mel Brooks, and from it he dispenses advice, jokes, and invitations to passers-by. [Ward (1985) ex. 311]

b. On one of September's last blast-furnace days, Emil Peterson parked his car along a quiet street in the tiny Delaware County burg of Eddystone and pulled a yellow plastic bucket from the back seat. In it he had expertly wedged an assortment of brushes and cans of cleanser, a hollyberry room deodorizer, knives, scissors, a couple of no-slip no-crease pants hangers and a box containing a boulder-sized zircon ring. A toilet-bowl swab protruded from the pail like a fluffy white pompon flouncing as he set off determinedly down the sidewalk. [Ward (1985) ex. 312]

In 15a, it seems that the relevant CP ('Mel Brooks dispenses something from some place') need not be salient in order for the PP to be felicitously preposed. Simply evoking a table does not guarantee the salience of an CP to the effect that things, such as advice, are dispensed from it. Similarly, in 15b, it seems unlikely that the speaker could plausibly assume that his audience was attending to the proposition 'The Fuller Brush salesman had expertly wedged something somewhere' prior to the preposing. As Ward observes, it is only semantically locative and directional PPs
that may be preposed in the absence of a salient CP. All non-locative subcategorized PPs do in fact require a salient CP for felicitous preposing. Consider, for example, the preposed benefactive PPs in 16:

(16)a. John can't come to the party tonight. #For his sister he's planning on building a birdhouse. [cf. John can't come to the party tonight. He's planning on building a birdhouse for his sister.]
b. John's going to build a skateboard for his brother. For his sister he's planning on building a birdhouse.

In 16a, the relevant CP -- 'John is planning on building something for someone' -- is presumably not salient in the context provided, and therefore the PP preposing is inappropriate. In 16b, where the same CP is salient, the preposing is well-formed.

The distinction between locative and non-locative constituents also accords with the findings of Kuno (1971, 1986) and Birner (in prep.), inter alia, that locatives behave as a distinct class with respect to a variety of other linguistic phenomena. Particularly relevant for our purposes is the fact that, as noted by Bresnan (p.c.), inversion around verbs other than be appears to be restricted to semantically locative constituents, as exemplified in 17.

(17)a. In a cottage lived three bears.
b. #In fear lived three bears.

Such evidence further supports our claim that a class of semantically locative elements must be distinguished, and that this distinction is relevant for a variety of linguistic phenomena.
Conclusion

In this paper we have argued that two types of inversion constructions can be distinguished, and that with each is associated a distinct discourse function. While non-locative inversion serves to mark an CP as salient shared knowledge in the discourse, locative inversion serves to present relatively familiar information in subject position. Moreover, following Prince 1986, the fact that locative inversion does not require a salient CP suggests that the two types of inversion may have distinct syntactic representations as well. A series of empirical studies is currently being conducted at Northwestern University to investigate this possibility.
Notes

[1] For the purposes of this study, we define an inversion as a sentence in which the logical subject NP appears in post-verbal position, while some other constituent appears as the left sister of the VP. For a discussion of some of the syntactic issues associated with inversion, see Bresnan & Kanerva 1989, Culicover & Rochemont in press, Green 1985, Levin 1985, and Levine 1989, inter alia.

[2] Such an information status corresponds roughly to Jackendoff's (1972) PRESUPPOSITION; Gazdar's (1979) POTENTIAL PRESUPPOSITION, or PRE-SUPPOSITION; Karttunen and Peters' (1979) COMMON GROUND; and Wilson and Sperber's (1979) FIRST BACKGROUND ENTAILMENT.

[3] Prince's discussion of the two remaining gap-containing constructions -- relative clauses and questions -- is not relevant for our present purposes.

[4] That initial elements indicating direction pattern like those indicating location can be seen in (i):

(i)a. We had a raid here. It was a set-up deal. A couple of crooked cops had some guy bring in cans of lunch meat. The guy said he's goin' out of business and he had a couple cases. I got a good price off of him. I set it in the aisle. About a half an hour later in walks these two guys. 'That's stolen merchandise. What else you got that's stolen?' The police went through the house. [cited in Terkel 1974:549]

b. X walks somewhere.

It seems unlikely that the CP in (i)b is rendered salient by the prior context in (i)a. Thus it would seem that locatives and directionals behave as a single semantic class with respect to discourse function in inversion.

[5] Further research is required to delimit precisely what constitutes a semantically locative constituent. While the PPs in 8 and 9 seem uncontroversially locative in nature, it is less obvious that a participial phrase such as that in (ii) -- Standing at his side -- should also be considered locative:

(ii) Reagan was in a cheerful mood when he began his briefing by announcing that hostilities on Grenada had ended and praising U.S. military forces for their conduct of the invasion, saying they are being described as
"rescuers" and "liberators" by the island's residents. His demeanor changed abruptly, however, when reporters began asking questions about negative reactions to the U.S. military operation. Standing at his side were Secretary of State George P. Schultz; national security adviser Robert C. McFarlane, and Donald H. Rumsfeld, the former defense secretary whose appointment as Reagan's new Mideast adviser also was announced by the President. (Philadelphia Inquirer, p. A-1, 11/4/83)

Nonetheless, an examination of our corpus indicates that the same functional distinction that holds between locative and non-locative PPs also holds between participial and other phrasal types containing locative PPs. The extent to which locativity can "percolate" in this way, however, remains unclear.

[6] See also Horn 1986 for further discussion of the "conspiracy involving the correlation of sentence position, thematicity or topichood, and assumed familiarity." (1986:172)

[7] While previous studies (e.g. Hartvigson & Jakobsen 1974; Gary 1976, Green 1980, 1985; inter alia) have posited a variety of discourse functions for inversion, these studies are incomplete in that they have failed to recognize this distinction.

[8] In this sense, both types of inversion discussed here perform what Green (1980) calls a "connective function," connecting the entities evoked in the post-verbal constituent to the prior context. That is, the marking of a salient OP (and the instantiation of its variable) constitutes one way of connecting the post-verbal information to the prior context, and the presentation of relatively 'familiar' information before relatively 'unfamiliar' constitutes another.

[9] Of course an OP could be salient prior to a felicitous locative preposing; the claim here is simply that no salient OP is required for such preposing.
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