

The Voices in our Heads*

Craig Sailor (cwsailor@ucla.edu) and Byron Ahn (byron@ucla.edu)

UCLA Department of Linguistics

Morphological Voice and its Grammatical Interfaces

June 25, 2010

1 Preview

Observations:

- A great deal of work is devoted to grammatical voice and its syntactic/semantic effects (esp. valency changes, theta assignment, implicit argumenthood, etc.)
 - But how these voices are syntactically derived, and why they are so cross-linguistically widespread is less well-understood
- The “core” voices (active, middle, and passive) are, within a single clause, in complementary distribution
 - This strongly indicates a correlation; yet no unified syntactic analysis currently exists, to our knowledge

Claim:

- The syntax of these voices can be unified under a single functional head, Voice⁰, which can be defined by only two features.
- In this way, voices are not syntactic transformations, and there is no notion of ‘default’ voice.

Analysis:

- Voice⁰ is responsible for any and all syntactic differences distinguishing the grammatical voices.
 - We accomplish this using only existing syntactic machinery: external argument selection (Kratzer 1996) and predicate fronting (Collins 2005).

Consequences:

- Finally does away with the notion that non-active voices are transformations on actives
 - A clause’s voice is simply the result of feature-checking on Voice⁰
- Greatly constrains the range of derivational possibilities, easing the acquisitional burden
- Establishes unaccusativity as a voice-related phenomenon

*We would like to thank the audience of the UCLA Syntax/Semantics Seminar for their remarks, especially Anoop Mahajan for noting (encouragingly) that “nobody in our department really believes what you’re saying.”

2 Background: How many VoicePs are there?

Here's the story of a Voice Projection that was thought up in two very different ways:

- One of them had theta roles (Kratzer 1996)
- Unlike the other (Collins 2005), which introduced “Smuggle”

Now in this talk we propose they come together.¹

2.1 VoiceP in Actives – Kratzer (1996)

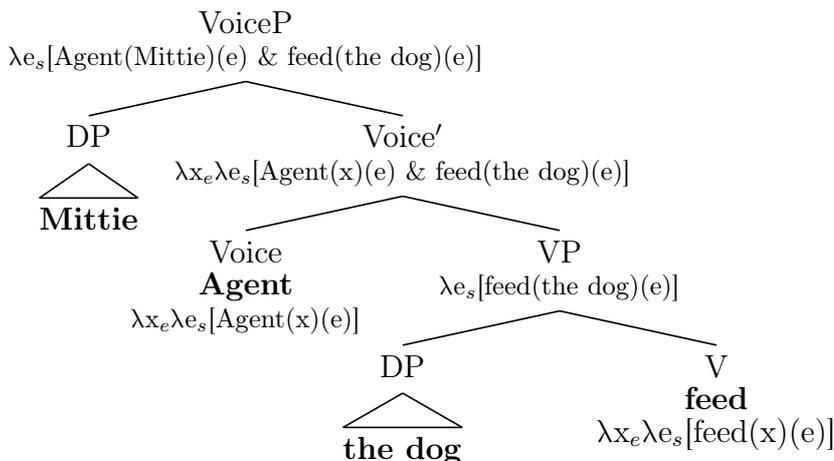
Externalized External Argument

Kratzer: predicates should be treated in a neo-Davidsonian way, both semantically AND syntactically

- In this way, external arguments are not merged within vP/VP – instead, they are merged higher, at VoiceP
- In other words, the external argument has been “severed” so that it is outside of the domain of predication (vP)

An example of Kratzer's Voice

(1) Mittie fed the dog² (example from Kratzer 1996)



VoiceP is used for voice phenomena?

Kratzer argues for the severing of both Agents and “Holders” – the external arguments of stative verbs.

- She accomplishes this with two different Voice heads, each of which assigns its own theta role to the external argument it introduces.
- Thus a Voice⁰ may select for different kinds of external arguments, possibly even no argument.

¹The Voice head will bear a complex feature bunch. It derives voice data using one head. That's the way we work out this VoiceP hunch. (This VoiceP hunch...)

²Note that Kratzer needs to employ some new semantic machinery to merge Voice and VP: Event Identification.

Voice⁰ and Theta Roles

Kratzer's proposal has non-trivial consequences for Baker 1985's UTAH:

- It is still true that every theta role, Y, has a unique lexical assigner, X. (Agent can only come from Voice, Theme can only come from the verb, etc.)
- However, it is no longer true that X must assign that same Y in every instance (Voice can assign Agent or Holder)
- Indeed, it need not assign a theta role at all (non-active Voice doesn't introduce an external argument).

This does away with the notion of "uniform" theta positions.

Voice⁰ is starting to sound like grammatical voice³...

- This is the inspiration for the analysis we pursue here, where the type of Voice⁰ in a clause determines its "voice syntax" (in a way to be made clear).

Kratzer never actually proposes a working theory of Voice appealing to her VoiceP. She only hints at the possibility:

- "Kratzer (forthcoming) argues that Voice is truly at the heart of a theory of voice." (Kratzer 1996:120)⁴
- "Suppose there are two kinds of voice heads in English: active and non-active. Active voice heads add external arguments and assign (check) accusative Case. Non-active voice heads do not add external arguments and do not assign (check) accusative Case." (Kratzer 1996:123)

Kratzer's Voice⁰ is:

the head which introduces the external argument and assigns its theta role. Voice⁰ may have something to do with grammatical voice, but this is not developed.

2.2 VoiceP in Passives – Collins (2005)

The passive Voice head

Collins (2005) also employs a projection called VoiceP (but without mention of Kratzer 1996).

- It does not host external arguments, which in this theory are introduced in [Spec,vP]
- Instead, this VoiceP is strictly for the passive voice
 - For example, it hosts the passive suffix in Swahili, and triggers "smuggling" for the English passive, as we will see shortly

VoiceP is completely absent in active clauses.

- Meaning, effectively, that VoiceP = "PassiveP"

³We recognize that precisely what can be defined as "grammatical voice" is somewhat of an open issue. It almost certainly includes active, middle and passive; but does it also include reflexives? anti-causatives? raising constructions? unaccusatives? everything?

⁴While aspects of the Kratzer (forthcoming) citation are available on Kratzer's website, the relevant parts of it relating VoiceP to voice are unavailable and/or incomplete.

The English passive

Collins: Passives have the same fundamental argument structure as actives.

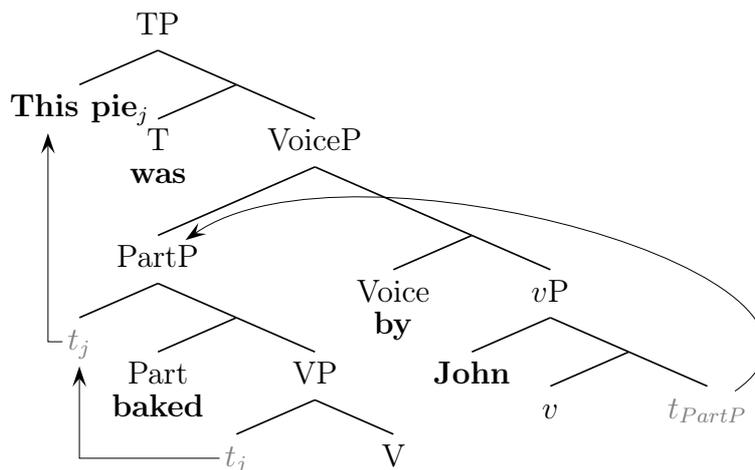
The internal argument needs to be able to move past the external argument to [Spec,TP].

Direct movement would violate minimality: the external argument ([Spec,*v*P]) is structurally superior.

- To overcome this, the internal argument is “smuggled” across the external argument inside a fronted projection of the verb (phrasal movement à la Baltin 2002).
 - This is movement to [Spec, VoiceP], which is triggered by Voice⁰ (spelled out as “by” in long passives).
- Inside this fronted verbal projection, the internal argument is now the superior candidate for movement to subject position in [Spec,TP]

A passive derivation, under Collins (2005)

(2) “This pie was baked by John”



Collins' Voice⁰ is:

the head which derives the syntax of passives, hosting a fronted verbal projection and spelling out as “by” in long passives. It is not present in active clauses.

2.3 VoiceP in Middles – Ahn & Sailor (to appear)

Ahn & Sailor (to appear) show that the two prior instantiations of VoiceP (Kratzer 1996 and Collins 2005) can be profitably combined

- VoiceP is present in actives, and hosts the external argument (Kratzer)
- VoiceP is present in middles, and hosts a fronted verbal projection (like Collins' version for the passive)⁵

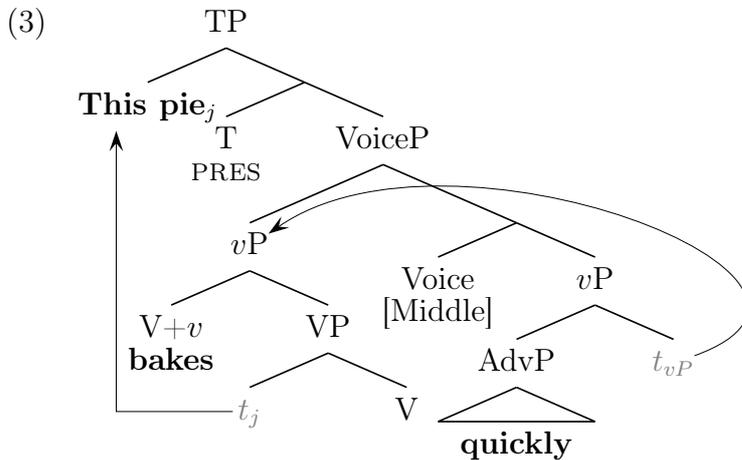
Combining these two syntactic uses of VoiceP, Ahn & Sailor (to appear) are able to capture apparent cases of subject-object inversion.

⁵Recall that there is no issue with the Spec, VoiceP being a theta position sometimes but not in others

Crucially, we treat Voice as distinct from, and structurally superior to, *v*, which may be confusing given how Voice and *v* have been used in the past. To clarify:

- We employ *v* as the locus of causation whereas Voice is responsible for both external argument introduction and predicate fronting.

Given this, Ahn & Sailor (to appear) argue that middles involve a fronted verbal projection in the absence of an external argument:



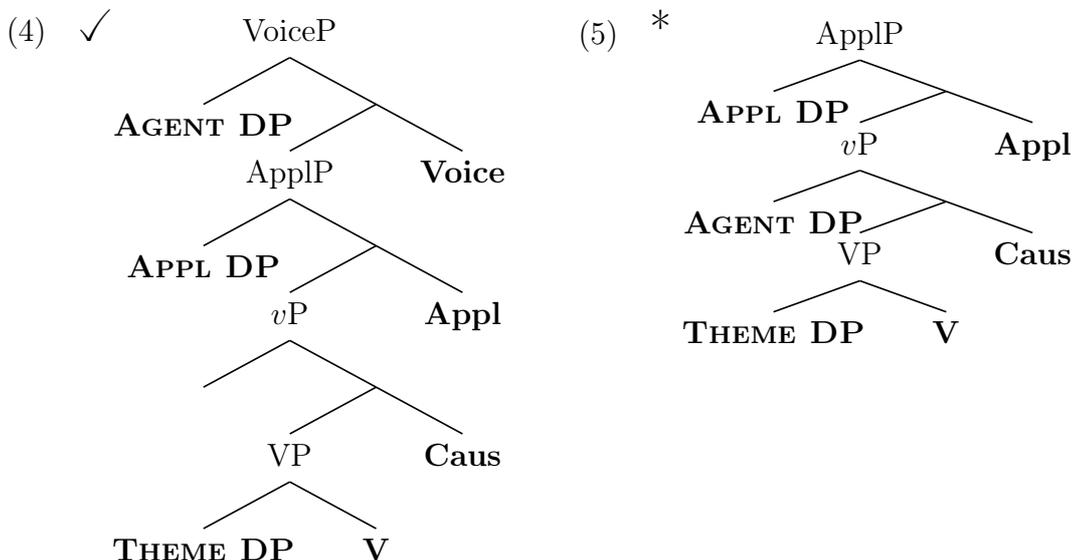
In the remainder of this talk, we will pick up where Ahn & Sailor (to appear) left off, by extending the VoiceP analysis of voice to all grammatical voices.

Ahn & Sailor's Voice⁰ is:
 the head which modulates all grammatical voice alternations, by introducing an external argument (or not) and triggering predicate fronting (or not).

A brief aside: Distinguishing Voice from *v*

Harley (2007, tomorrow) motivates a distinction between *v*⁰ and Voice⁰, at least in part, with scope data in Hiaki

- Most basically, she argues that Hiaki must have a structure in (4), where VoiceP introduces the Agent, and not in (5), where VoiceP and *v*P are conflated.



2.4 Interim Summary

Thus far, we have discussed the familiar voices (active, passive and middle) in terms differently framed VoicePs.

We have seen the voices differ across two syntactic properties – the introduction of an external argument, and the fronting of a predicate:

	Active	Passive	Middle	Unaccusatives
External Argument	Subject DPs	long: by-phrase short: E.C.		
Fronted Predicate		object overcoming minimality	“subject-object inversion”, adverbs	

Table 1: The Two Syntactic Properties of VoiceP

- What’s unaccusative doing here?
 - We’ll see shortly...

3 The syntax of VoiceP

3.1 Grammatical voice in a Minimalist architecture

Q: Can these prior approaches to argument structure, voice phenomena, and VoiceP be unified in a principled way?

- Under the Minimalist Program (Chomsky 1995), structure-building is just Merge and Move
- These operations apply to satisfy features borne by lexical items (e.g. functional heads)
- So any difference in structure between two derivations A and B necessarily reflects differences in the lexical items (features) involved in A and B
- But like the basic operations, the number of functional heads must be constrained
 - Featural variation makes this possible: multiple lexical entries for a single head shifts the burden off the syntax (away from transformations) and onto the lexicon
 - The lexicon is already assumed to be the source of cross-linguistic variation:
 - (6) **Borer-Chomsky Conjecture**: “All parameters of variation are attributable to differences in features of particular items (e.g. the functional heads) in the lexicon.” (Baker 2008)

We adopt the strongest possible interpretation of this principle here.

- (7) Proposal: A functional head Voice⁰ is present in every finite clause, and it alone determines the grammatical voice (passive, middle, etc.) of that clause. Any and all syntactic differences among the voices arise from featural differences among the lexical entries for Voice⁰.

Thus, we assert what was implied in Collins (2005): there are no voice-related “transformations.” Passives and middles are in no way derived from actives.

- Instead, the three are truly in complementary distribution:

- (8) **The 1-Advancement Exclusiveness Law** (Perlmutter & Postal 1984:(9))
 “The set of advancements to 1 in a single clause contains at most one member.”

Put into standard GB/Minimalist terms, the 1AEX describes the fact that more than one “promotion to subject” operation⁶ per clause is impossible:

- Passivizing a passive,

- (9) a. Letters have been written to Senator Warhola by many constituents.
 b. *Senator Warhola has been written to by many constituents by letters.
 Adapted from Perlmutter & Postal (1984:(40))

- Passivizing a middle,

- (10) a. Spam sells quickly in Safeway.
 b. *Safeway is sold quickly in by Spam. Ahn & Sailor (to appear)

- Passivizing an unaccusative

- (11) a. A train arrived in the station.
 b. *The station was arrived in by a train.

Any combination of these voice “transformations” (e.g. middling a passive, etc) is also impossible.

The theory we propose captures the 1AEX (which is really just a set of descriptive facts) straightforwardly:

- Each clause has at most one Voice⁰
- For this reason, a single clause lacks the structure to derive the ungrammatical (b) examples above

Likewise, the data seem to be telling us that unaccusatives pattern like a distinct voice, which we will see very shortly.

3.2 Deriving structures with this theory

We claim that Voice⁰ minimally carries two binary features:

- one which can trigger the merger of an external argument, and
- one which can trigger the movement of a verbal projection.

For ease of exposition, we will refer these two features as $\pm\mathbf{uDP}^*$ and $\pm\mathbf{uvP}^*$ ⁷

- The settings of these two binary features yield four possible varieties of Voice⁰:

(12)

	+ \mathbf{uDP}^*	– \mathbf{uDP}^*
– \mathbf{uvP}^*	Active	————
+ \mathbf{uvP}^*	Passive	Middle

⁶We do not espouse a transformational view of voices at all; there are no voice transformations/operations in this analysis, nor any ‘default’ voice.

⁷The [*] diacritic following a feature indicates that feature is “strong” (it must be checked locally; Chomsky 1995).

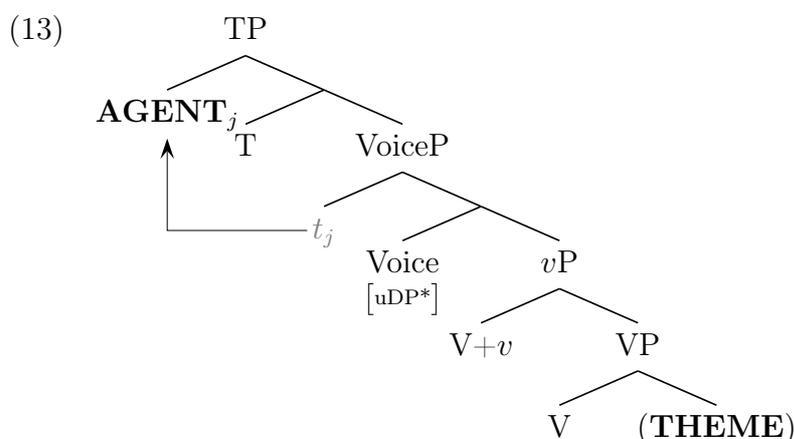
The top-right cell indicates a negative setting for both features, meaning that the Voice head effectively plays no role

- Assuming the projection of only what you need for the interpretation, we must assume that in such cases VoiceP is completely absent from the derivation.
- Therefore unaccusatives⁸ – unlike the voices we’ve already seen – are derived by the absence of VoiceP in a clause.⁹

The active and middle voices are straightforwardly derived from these features, as we will now see.

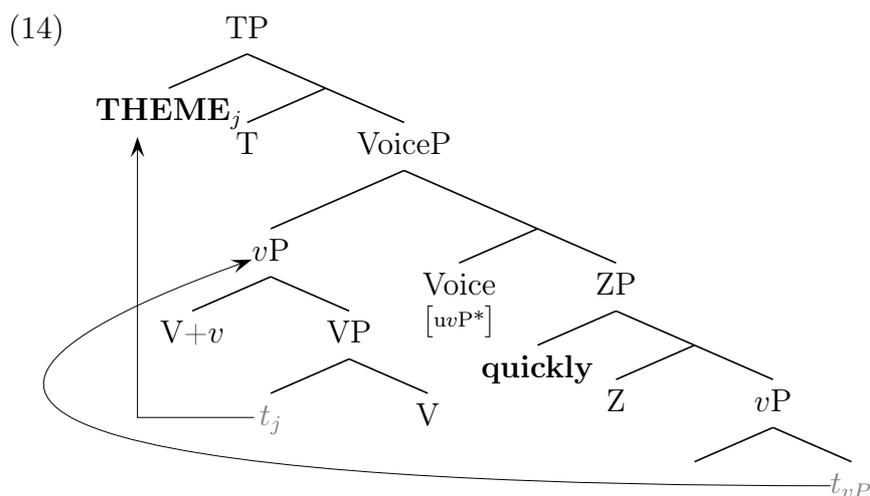
Active

The active derivation looks much like Kratzer’s implementation shown earlier – the major difference is that we’ve added v^0 so it can introduce causation when appropriate.



Middle

The middle voice looks rather different from the active – there is no external argument in VoiceP, but instead there is a fronted predicate.



⁸It looks like, at least for superficial reasons, raising constructions also fit this bill. We leave them aside for now.

⁹If you tried to “active-ize/passive-ize/middle-ize” an unaccusative (recall that there are no active/passive/middle transformations), you’d just end up with an active/passive/middle – there is no way to simultaneously have and not have Voice⁰ in a single clause.

This structure contains:

- no [uDP*] feature, and consequently, no introduced external argument
 - This is extensively argued for by Zribi-Hertz 1993, Rapoport 1999, and Bhatt & Pancheva 2006, Ahn & Sailor (to appear), *inter alia*
- a [uvP*] feature, and thus obligatory predicate fronting
 - The effect of this predicate fronting is that manner adverbs immediately follow the middled verb.
- a manner adverb like *quickly* merge between *vP* and Voice (ZP, here).¹⁰
 - They must merge above *v* because they precede the highest position to which the verb moves; and they must follow Voice for word order reasons.

Adverbs provide support for our proposal. Contrast the predictions made by predicate fronting (Ahn & Sailor) to those made by head-movement (Fujita 1996), the latter, but not the former, wrongly predicts (16c) to be good.¹¹

- | | | |
|------|---|----------------------------|
| (15) | a. The salami [cuts] _x easily <i>t_x</i> . | Moved verb |
| | b. *?The salami easily [cuts]. | Unmoved verb |
| | | (modified from Iwata 1999) |
| (16) | a. My TV [<i>v</i> P turns on] _x quickly <i>t_x</i> . | Moved verb phrase |
| | b. ??My TV quickly [<i>v</i> P turns on]. | Unmoved verb ¹² |
| | c. *My TV [<i>v</i> turns] _x quickly [<i>v</i> P <i>t_x</i> on]. | Head-moved verb |

Thus we claim that middles must inherently involve a *vP* fronting operation.¹³

Passive

The passive is a little more tricky.

- Here the Voice⁰ bears [uDP*] and [uvP*].

Assuming no multiple specifiers, we are left without the necessary structure to merge both a DP and a *vP*.¹⁴

- To resolve this issue, we need another projection, which we label FP in the structure below.
 - Voice⁰ undergoes head movement to F, once the external argument merges and checks the [uDP*] feature (before the predicate fronting)

¹⁰This position is consistent with the position of manner adverbs in Cinque's structure (Cinque 1999:101). Though we use a Cinquean approach, we do not rule out a *vP*-adjunction analysis. However, a Cinquean approach seems to have the benefit of deriving non-local movement of *vP* for free.

¹¹Adverbs *may* appear post-verbally in actives, whereas they *must* in middles; we take this as evidence that middles must involve a syntactic operation that actives need not. In cases where adverbs may appear post-verbally in the active voice as well, we make no claim as to whether this would necessarily involve *vP*-fronting.

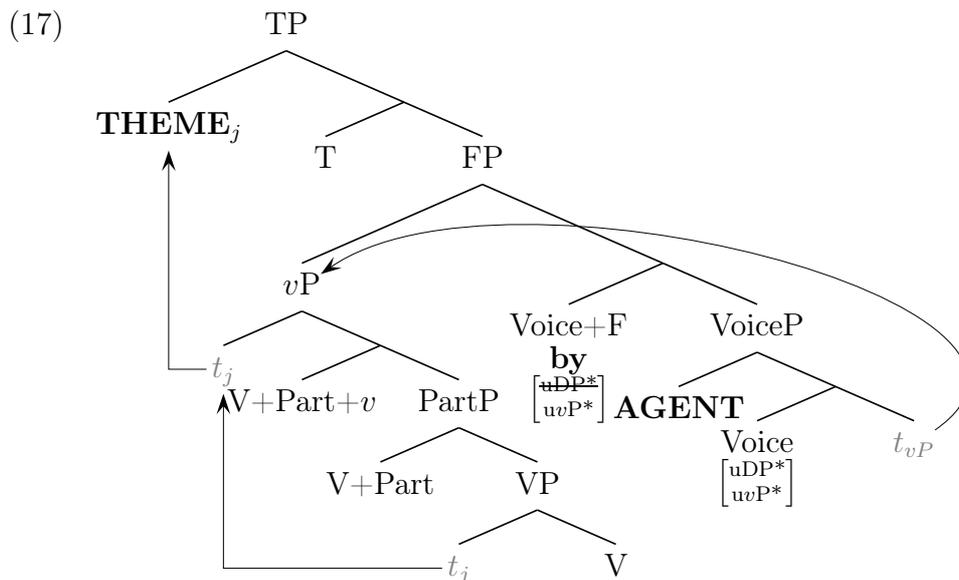
¹²This may become better in certain focus contexts, which independently affect word order.

¹³One may wonder whether *v* is necessarily part of a clause with a [Middle] Voice. Alexiadou et al. (2006) and Ahn & Sailor (to appear) argue that causation (which we take to be located in *v*) is necessary for middles to account for facts that relate them to causatives. This explains the fact that middle verbs appear to bear causative morphology in examples like (i).

- | | | |
|-----|---|--------|
| (i) | This flag {raises/*rises} easily, when you use the pully. | Middle |
|-----|---|--------|

¹⁴Multiple specifiers have independent issues, namely with the derivation of the by-phrase.

- With the [uDP*] feature checked, Voice adjoins to F, and the [uvP*] feature is checked by fronting the predicate



This derivation raises several questions.

- First, why does Voice head-move to F?
 - This may be an example of a case mentioned in Koopman (1996), whereby a head may move to avoid a violation of the Generalized Doubly-Filled COMP Filter.¹⁵
- When do features need to be checked/deleted by?
 - Some have proposed that features can only be checked by Merge and Head-Movement is not an operation of the syntax (Koopman 2006, Hornstein 2010); meaning, the derivation could not proceed with an unchecked [uvP*]
 - * It is of course impossible for both [uDP*] and [uvP*] to be satisfied by a single Merge, under such a theory.
 - On the other hand, a more party-line Minimalist (Chomsky 1995) approach to this would be that features only need to be checked before Spell-Out; and this head movement allows for that checking to occur.
- How do we prevent [uvP*] from being checked before [uDP*]?
 - As far as we can tell, the principle of (External-)Merge-over-Move (Chomsky 1995).
 - Also, you would violate the principle of Anti-Locality (Abels 2003) by moving vP from [Comp, VoiceP] to [Spec, VoiceP].

Clearly the structure is not without its problems, however it has an obvious advantage: it maintains Voice⁰ as the single driving force behind the syntax of grammatical voice.¹⁶

¹⁵This raises its own issues, since, for example, once [uvP*] is checked, the result is again a violation of just this principle.

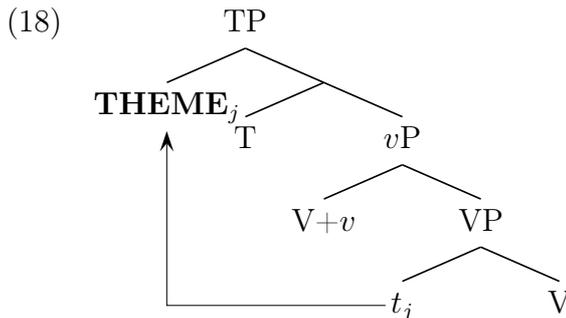
¹⁶This is our main motivation behind not considering a two-head solution that could possibly derive the same facts.

True Unaccusatives

We can now address the question raised back in section 2.4: “What about unaccusatives?”

Given the facts summarized in Table 1 and formalized in (12), we assume that true unaccusatives – those which lack a transitive alternation (unlike anticausatives, which we take to be a type of middle, cf. Schäfer 2008) – lack a Voice projection entirely.

- This derives the absence of both the external argument and predicate fronting in such cases.



This entails that true unaccusatives are not active (or middle, or passive).

What is the difference between True Unaccusatives and Middles?

- True unaccusatives lack an external argument at all levels of derivation and interpretation.
- This is unlike middles, which have been shown by many to lack an external argument in the narrow syntax, but which have an implicit argument in the interpretation.

- (19) a. The cup breaks easily with a hammer. Middle
 b. The cup suddenly broke (*with a hammer). True Unaccusative

Examples modified from Schäfer (2008) and Keyser & Roeper (1984)

- The difference between the two is that (19a) involves an implicit breaker who is the user of the hammer, which (19b) lacks.
- We derive this distinction in the following way:
 - Middles contain a Voice head, which have independently motivated to assign external argument theta roles.
 - This presence in middles (despite not obviously assigning a theta role) is what provides the interpretation of an implicit argument.
 - Given the complete absence of a Voice projection in true unaccusatives, this implicit argument interpretation is unavailable to them.

4 Extension: Some Idiom Data

O’Grady (1998) and others note that, while idiom chunks should in principle be able to undergo any movement, not all idiom chunks can undergo all kinds of movement.

- The principles underlying these resited-idiom-chunk-movement phenomena are left open for discussion

We tentatively suggest that the Voice head plays a crucial role in why certain idioms are incompatible with different voices, and certain ones are compatible:

- (20) **The Idiomatic Voice Hypothesis**: Due to the fact that external arguments are selected by and merged in the specifiers of Voice⁰, if the external argument of an idiom is lexically specified, the grammatical voice of the idiom is also specified, and thus unchangeable.

Since a specifier of VoiceP (an external argument) relies on the type of Voice⁰ – without committing to a theory of idioms – we hypothesize that lexicalizing the external argument would entail lexicalizing the Voice⁰.

This would seem to hint at an explanation for the data below.

- Specified external argument in an active, Idiom frozen as active
 - (21) the shit hit the fan
 - a. **The shit** seems to have hit the fan. Active
 - b. #The fan has been hit (by **the shit**). Passive
 - (22) curiosity killed the cat
 - a. **Curiosity** is what killed the cat. Active
 - b. #The cat was killed (by **curiosity**). Passive
 - (23) the train left the station
 - a. **That train** is likely to have left the station ages ago. Active
 - b. #The station has been left (by **the train**) ages ago. Passive
- Specified external argument in a passive; Idiom frozen as passive
 - (24) saved by the bell
 - a. Zack was saved #(by **the bell**). Passive
 - b. #**The bell** saved Zack. Active
 - (25) touched by an angel
 - a. OJ has been touched #(by **an angel**). Passive
 - b. #**An angel** has touched OJ. Active
 - (26) bitten by the love bug
 - a. Hugh was never bitten #(by **the lovebug**). Passive
 - b. #**The lovebug** never bit Hugh. Active
- External argument not specified; Idiom freely active or passive
 - (27) keep tabs on
 - a. The feds have kept tabs on many since 9/11. Active
 - b. Tabs have been kept on many (by the feds) since 9/11. Passive
 - (28) give the devil his due
 - a. John finally gave the devil his due. Active
 - b. The devil was finally given his due (by John). Passive
 - (29) drive up the wall
 - a. Cedric drove Dylan up the wall. Active
 - b. Dylan was driven up the wall (by Cedric). Passive

Note that this possible explanation has nothing to say about the cases in which there is no specified external argument, but whose voice seems to nonetheless be frozen.¹⁷ These must be blocked by other means.

The hypothesis that we make here makes strong cross-linguistic predictions that should be more closely examined.

If the Idiomatic Voice Hypothesis in (20)...

- ...holds in English, but not in every language:
 - We have an idea of how to form an explanation, but much work is left to be done.
 - This looks like extra evidence that VoiceP is deriving independent data in English.
- ...holds cross-linguistically:
 - The predictions are attested: this is strong evidence for the existence of VoiceP, as we have discussed it here, in other languages.
 - VoiceP is a member of the universal hierarchy of functional projections, and is cross-linguistically involved in grammatical voice.

¹⁷An example of this might be:

- (i) beat a dead horse
 - a. We're clearly beating a dead horse.
 - b. #A dead horse is clearly being beaten (by us).

See Fraser (1970) for some discussion of more data like this, where external arguments are clearly not playing a role in the grammaticality of transformations on idioms.

5 Summary

To conclude, a unified approach to the syntax of grammatical voice, under the banner of VoiceP, yields the following advantages:

- A truly minimalist approach to grammatical voice: ultimately necessitating only one head with two features
 - This greatly reduces the range of derivational possibilities, massively reducing the acquisitional burden on the learner.
 - Moreover, by the Borer-Chomsky Conjecture, we predict a small range of typological variation in the way in which grammatical voice varies from one language to another.
 - * We make clear predictions on how voice derivations can differ across languages, unlike other (language-specific) analyses of voice phenomena, which leave undefined the syntactic operations that may apply.
- No more voice transformations stipulated as independent syntactic operations
 - Likewise, there is no default voice.
- Correctly predicts many empirical properties of every voice:
 - The reduction of 1AEX from a principle to a consequence of the basic syntax of our theory,
 - Adverb ordering in middles,
 - Implicit argument interpretation available for middles but unavailable for true unaccusatives, and
 - Cross apply all advantages gained by the independent proposals for VoiceP in Kratzer (1996) and Collins (2005)
 - * Kratzer’s semantic compositionality of severed external arguments, Collins’ avoidance of minimality violations in passives, etc.
- The apparently correct addition of true unaccusatives to the class of voice phenomena (in English)
- The Idiomatic Voice Hypothesis, a jumping-off point for a novel theory constraining syntactic operations on idioms

REFERENCES

- Abels, K. 2003. Successive Cyclicity, Anti-Locality, and Adposition Stranding. Ph.D. thesis, University of Connecticut.
- Ahn, B. & C. Sailor. To appear. The Emerging Middle Class. In Proceedings from the 46th Annual Meeting of the Chicago Linguistic Society.
- Alexiadou, A., E. Anagnostopoulou, & F. Schäfer. 2006. The properties of anti-causatives crosslinguistically. In Phases of interpretation, volume 91 of Studies in Generative Grammar, chapter 3. Mouton De Gruyter, pages 187–211.
- Baker, M. 1985. Incorporation, a theory of grammatical function changing. Ph.D. thesis, MIT.
- Baker, M. 2008. The macroparameter in a microparametric world. In The limits of Syntactic Variation, edited by T. Biberauer. John Benjamins, pages 351–374.
- Baltin, M. 2002. Movement to the Higher V is Remnant Movement. Linguistic Inquiry 33(4):653–659.
- Bhatt, R. & R. Pancheva. 2006. Implicit arguments. In The Blackwell Companion to Syntax, edited by M. Everaert & H. van Riemsdijk, volume 2. Blackwell Synergy, pages 554–584.
- Chomsky, N. 1995. The Minimalist Program. MIT Press.
- Cinque, G. 1999. Adverbs and Functional Heads: A Cross-linguistic Perspective. Oxford University Press.
- Collins, C. 2005. A Smuggling Approach to the Passive in English. Syntax 8(2):81–120.
- Fraser, B. 1970. Idioms within a Transformational Grammar. Foundations of Language 6(1):22–42.
- Fujita, K. 1996. Double objects, causatives, and derivational economy. Linguistic Inquiry 27(1):146–173.
- Harley, H. 2007. External arguments: on the independence of Voice and v. Presented at the Thirtieth Annual Colloquium of Generative Linguistics in the Old World.
- Harley, H. tomorrow. Lessons from Voice Alternations in Hiaki: Scope, Morphosyntax and the Mirror Principle. Presented at Morphological Voice and its Grammatical Interfaces, University of Vienna.
- Hornstein, N. 2010. Outlines of a Minimalist Syntax. Presented at Syntax Fest 2010.
- Iwata, S. 1999. On the status of an implicit arguments in middles. Journal of Linguistics 35(3):527–553.
- Keyser, S. J. & T. Roeper. 1984. On the Middle and Ergative Constructions in English. Linguistic Inquiry 15(3):381–416.
- Koopman, H. 1996. The spec-head configuration. Syntax at Sunset: UCLA Working Papers in Syntax and Semantics 1(37–65).

- Koopman, H. 2006. Agreement configurations: In defense of “Spec head”. In Agreement Systems, edited by C. Boeckx. John Benjamins, pages 159–199.
- Kratzer, A. 1996. Severing the external argument from its verb. In Phrase Structure and the Lexicon, volume 33 of Studies in Natural Language and Linguistic Theory. Dordrecht: Kluwer, pages 109–137.
- Kratzer, A. forthcoming. The Event Argument and the Semantics of Voice. MIT Press.
- O’Grady, W. 1998. The Syntax of Idioms. Natural Language & Linguistic Theory 16(2):279–312.
- Perlmutter, D. & P. Postal. 1984. The 1-Advancement Exclusiveness Law. In Studies in Relational Grammar 2, edited by D. Perlmutter & C. Rosen. University of Chicago Press.
- Rapoport, T. 1999. The English Middle and Agentivity. Linguistic Inquiry 30(1):147–155.
- Schäfer, F. 2008. Middles as Voiced Anticausatives. In Proceedings of the 37th Annual Meeting of the North Eastern Linguistics Society, edited by E. Elfner & M. Walkow. GLSA. [Http://ling.auf.net/lingBuzz/000400](http://ling.auf.net/lingBuzz/000400).
- Stroik, T. 1992. Middles and Movement. Linguistic Inquiry 23(1):127–137.
- Stroik, T. 1995. On Middle Formation: A Reply to Zribi-Hertz. Linguistic Inquiry 26(1):165–171.
- Zribi-Hertz, A. 1993. On Stroik’s Analysis of English Middle Constructions. Linguistic Inquiry 24(3):583–589.

APPENDIX

A Middles lack an external argument

We (like others: Zribi-Hertz 1993, Rapoport 1999, and Bhatt & Pancheva 2006, Schäfer 2008, *inter alia*) argue that this is due to the fact that there never was an external argument to be given oblique marking – unlike short passives. We will run through some of the tests below.

No Oblique Expression of an External Argument

Middles, unlike actives and passives, can never express an external argument – even as oblique expression, one is impossible.

- | | | | |
|------|----|--|---------|
| (30) | a. | Mobsters bribe bureaucrats easily. | Active |
| | b. | Bureaucrats are bribed easily by mobsters. | Passive |
| | c. | *Bureaucrats bribe easily by mobsters. | Middle |

There is no reason that a *by*-phrase should be the only oblique expression of an external argument. In fact, Stroik (1992) argues that *for*-phrases are overt expressions of the implicit external argument in middles. His analysis is on shaky ground, however. Evaluative phrases seem to license *for* phrases, outside of middle contexts, and as Zribi-Hertz (1993) points out, the examples with *for* that Stroik points out are likely connected to this. Furthermore, many middles disallow an evaluative (especially when they lack an adverb evaluator) such phrase:

- (31) Spam sells **by*/**for*/**from*/**with*/**in*/**on* the shopkeeper.

No Obligatory Control

Moreover, whatever is “missing” (if anything) in middles is distinct even from the “missing” external arguments of short passives. That said, Stroik (1995) attempts to argue that they are the same, using data like (32) in which there seems to be subject control.

- (32) These houses won’t sell without PRO advertising them

He argues that the sellers are the implicit advertisers. However, it does not seem to obligatory subject control, as PRO could have an arbitrary reference here, as it can below in (33).

- (33) There is a plan PRO_{arb} to kill Sawyer.

Stroik’s examples are therefore likely to involve PRO_{arb}. In fact, it is not difficult to find examples of obligatory control being licit from an passive’s implicit external argument, like (34b), but not from a middle’s, as in (34c).

- | | | | |
|------|----|---|---------|
| (34) | a. | Workers _i assemble our toys rapidly [PRO _i to meet deadlines]. | Active |
| | b. | Our toys are assembled <i>e_i</i> rapidly [to PRO _i meet deadlines]. | Passive |
| | c. | *Our toys assemble rapidly [to PRO meet deadlines]. | Middle |

Thus we argue that implicit arguments in middles are not in the narrow syntax, where obligatory control is licensed.

No Subject-Oriented Adverbs

Finally, as discussed in Bhatt & Pancheva (2006) and Ahn & Sailor (to appear), subject-oriented adverbs are ungrammatical in middles (but possible in short passives):

- (35) a. Doug (always) translates Greek begrudgingly . Active
 b. Greek is (always) translated begrudgingly. Passive
 c. *Greek (always) translates begrudgingly. Middle

Assuming that such adverbs require the presence of an external argument, it must be the case that clauses in the middle lack the external argument.

Thus we have seen ample support that, while Middles and passives look similar on the surface (both are missing a [pronounced] external argument), they must be quite different. In fact, all of the tests seem to indicate that middles do not have an external argument at any point in the syntactic derivation.

B Accommodation Class Middles

Under this analysis, voice is defined by two properties: licensing an external argument, and predicate fronting. Ahn & Sailor (to appear) take it to be possible that these two properties could interact in biclausal structures with differing voices in each clause.

In this way, the relationship between (36a) and (b) is demystified – (36a) has a middle-Voiced matrix clause with an active-Voice embedded clause; the middle fronts the lower *v*P, which allows for the lower argument in (36b), to become superior to the higher argument.

- (36) a. This bed sleeps two people.
 b. Two people can sleep in this bed.

(37) “This bed sleeps tall people comfortably”

