The Structure of Hawaiian

Day 7
Part 1: Possession Morphology

Part 2: Morpho-Syntax

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Introduction
Word Orders and Movement Types

Predicate Movement
Predicate Initial
VP-remnant formation

Head Movement
Complementation in English
T & C interaction in Hawaiian

Syntax Conclusion
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Real Conclusion
1. Introduction
   Word Orders and Movement Types

2. Predicate Movement

3. Head Movement

4. Syntax Conclusion

5. Real Conclusion
VSO From a Typological Perspective

- Verb-Subject-Object (VSO) word order is well-attested among languages of the world, but uncommon
VSO From a Typological Perspective

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- Word order frequencies (Tomlin, 1986):
  1. SOV 45%: Japanese, Latin
  2. SVO 42%: English, Mandarin Chinese
  3. VSO 9%: Hawaiian, Irish
  4. VOS 3%: Malagasy
  5. OVS, OSV - controversial, possibly attested
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• Crucial Point: *Subject intervenes between Object and Verb in VSO*
Why Subject Intervention Matters

- Verbs are in a particularly close relationship with objects:

  (1)  
  a. **SUBJ eat** *(ANYTHING EDIBLE/METAPHORICALLY APPROPRIATE)*  
  b. Watson ate the house plant for breakfast.  
  c. * Watson ate justice for breakfast.

  (2)  
  a. **SUBJ die** *(✓ a terrible death) (*ANYTHING ELSE)*  
  b. My house plant died a terrible death yesterday.  
  c. * My house plant died its life yesterday

  (3)  
  a. **SUBJ arrives** *(✓ ∅) (*ANYTHING ELSE)*  
  b. I arrived at the station.  
  c. * I arrived the trip at the station.
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(3)   a. SUBJ *arrives (✓ ∅) (∗ ANYTHING ELSE)
   b. I arrived at the station.
   c. * I arrived the trip at the station.

• Movement can account for alternative word orders:

(4) What did you eat t what? (possible answer = something edible)
Primary Questions for Investigation

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- Q: Can we understand VSO in terms of general principles that are applicable to more familiar language types, such as SVO (English) or SOV (Japanese)?
Primary Questions for Investigation

- Q: What is *really* meant by VSO? Is this a useful, or even accurate, term?
  - A: *somewhat accurate, but also misleading*

- Q: Can we understand VSO in terms of general principles that are applicable to more familiar language types, such as SVO (English) or SOV (Japanese)?
  - A: Yes!
A Basic Syntax for English

- Key points:
  1. the subject moves
  2. verb stays within the verbal domain
VSO - Flat Structure

- verb-subject-object, one hypothesis (Chung 1976)

Sentence

\[ V \rightarrow \text{DP} \rightarrow \text{DP} \]

\[ \text{VERB} \rightarrow \text{SUBJ} \rightarrow \text{OBJ} \]
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Semantic Problems
VSO - Flat Structure

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  Sentence
  \[ \begin{array}{c}
  V \\
  \downarrow \\
  \text{VERB} \\
  \downarrow \\
  \text{SUBJ} \\
  \downarrow \\
  \text{OBJ}
  \end{array} \]

  - Semantic Problems
  - Explanatory Problems
Getting the Verb In Front - Head Movement

- Head-Movement moves one 'unit' (word or set of features) from one head-position to another
- Head Movement occurs in English questions
Getting the Verb In Front - Predicate/VP-Movement

- VP movement moves the entire VP
- Phrasal (XP) movement generally cannot target heads (i.e. X₀'s)
- Problem - VP-movement doesn't derive subject intervention
Proposal - Basics

- I derive the subject intervention, yielding VSO, with VP-movement
- VP-movement can *effectively* be head movement if we make the object leave VP before VP-movement
- Head movement also applies, but to tense markers
- VSO as a descriptive term obscures crucial aspects of Hawaiian syntax
- *Hawaiian syntax can be understood in terms of the same rules that apply to any other language*
The Structure of Hawaiian

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1. Introduction
2. Predicate Movement
   2.1 Predicate Initial
   2.2 VP-remnant formation
3. Head Movement
4. Syntax Conclusion
5. Real Conclusion

Introduction

Word Orders and Movement Types

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Real Conclusion
Hawaiian can be understood as a predicate-initial, in addition to verb-initial:

(5) He kumu-kula 'o Noelani.  
    a teacher-school SUBJ Noelani  
    Noelani is a teacher.

(6) Ua ha'ī 'o Kekoa he kumu-kula 'o Noelani.  
    PAST say SUBJ Kekoa a teacher-school SUBJ Noelani  
    Kekoa said that Noelani is a teacher.

(7) Ua hau'oli 'o Kekoa.  
    PAST happy SUBJ Kekoa  
    Kekoa was happy.
Predicate-fronting

- Similar data in Niuean led to the proposal that VP (i.e. the predicate) moves to sentence-initial position in the derivation of the Niuean clause (Massam, 2001).
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- Predicate-fronting analyses have become popular to derive verb-initial syntax (see Chung (2005) and Chung & Polinsky (2009) for review).
- VP-movement gets the predicate initial data right.
Word-Order Challenge for VP-Fronting Derivation

- I adopt Massam's VP-fronting analysis
- But, the word order is wrong for VSO
- Massam's solution to this problem is VP-remnant movement in VSO clauses.
- VP-remnant = a VP in which everything except the verb has moved out of VP
Massam’s Approach: Object Moves for Case

(8) Ne kai e Sione e tau past eat Erg Sione Abs pl
taro...
Sione ate the taros ... (Massam 2001, Seiter 1980)

Q: Why does the object leave VP?
A: Massam ties VP-remnant formation to case.
Problems for Case-Based Remnant Formation 1

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- Case has been argued to *not* trigger movement in research following Massam’s work on Niuean (Chomsky 2000, et alia)
- Most importantly: Case only applies to DPs (e.g. *who* vs *whom*), not entire sentences (sentence = CP)
Problems for Case-Based Remnant Formation 1

- Niuean and Hawaiian differ in case marking pattern
- Case has been argued to not trigger movement in research following Massam’s work on Niuean (Chomsky 2000, et alia)
- Most importantly: Case only applies to DPs (e.g. *who vs whom*), not entire sentences (sentence = CP)
- Therefore, Massam fails to predict V-S-CP word order in both Hawaiian and Niuean:

  (9) Ua ha’i mai ke haumana [ua hala ka manawa].
  PAST tell DIR/ASP the student [PAST pass the time]
  The student said that the time had passed. (Hawkins, 1979)

  (10) Ne manatu e Mataginifale [ko e mena fai
  PAST think ABS Mataginifale [PRED ABS thing have
  mata-fohi ... blade-scraper ...
  Mataginifale remembered that she had the blade ... (Niue 1982, Massam 2001)
Problems for Case-Based Remnant Formation 2

- sentences (=CP) do not need case
- Why is CP moving if it doesn’t need case?
- Shouldn’t the same analysis account for both V-S-O and V-S-CP?

Diagram:
- CP → C⁰
- TP → T⁰
- VP → T’
- ErgP → v⁰
- DP → SUBJ
- SENTENCE → ∅
- tVP → t
- ?P → v’
Solution, Part 1: Subject/Non-Subject Asymmetry

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• The same observation holds for Hawaiian, including in raising (under negation), topicalization, and wh-movement:

(11)  He aka ka mea a Kekoa i ku’ai ai.
a what the thing POSS Kekoa PAST buy RESPRO
What is the thing that Kekoa bought? (compare *What that did you buy?)*

(12)  ’O wai i ku’ai i ka i’a.
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- I argue that the subject/non-subject asymmetry can be extended to embedded CPs (i.e. embedded sentences).
- **Bottom line:** it is impossible to get a non-subject verbal argument (noun or sentence complement) in front of the subject in Hawaiian.
Interlude: Why Linear Order Constraints are Interesting

- We’ve been told that syntax does not work this way:

(13) The Blue Bridge, which is on campus, is awesome!
(14) Is the Blue Bridge, which is on campus, awesome?
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Interlude: Why Linear Order Constraints are Interesting

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- But if we find that linear order *does* matter, how can we link syntax to pronunciation?
Solution, Part 2: Cyclic Linearization

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- The grammar takes a 'snapshot' of the structure - you can add but not rearrange as you build:
  
  (16) ✓ 1, 1-2, 1-2-3, 1-2-3-4
  (17) *1, 1-2, 1-2-3, 1-3-2-4
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- Additional Proposal: Elements in intermediate positions are not visible to the linearization algorithm.
- No surface structure level of syntax - phonology is told what to do in stages. Syntax is built piece-by-piece, bottom-up (Chomsky 1995, Epstein et al. 1998, et alia)
Recall - Hawaiian vs. English Structure

We often all eat Pok Pok

Subject moves in English, but stays in-situ in Hawaiian

(18) Holoholo mau 'o Kehau me ke kaono. cruise always subj Kehau in the town
Kehau always cruises in town. (Cleeland, 1994)

EPP requires a syntactic item in Spec, TP: VP moves in Hawaiian, DP in English
Forcing Remnant Formation in Hawaiian 1

- Subject stays in place (all features relevant for pronunciation are satisfied)
- My proposal: linearization is sensitive to this fact
- XP (which could be DP, PP, or CP) also has full feature satisfaction
- When we take our 'snapshot', both subject and XP are visible
- VP-movement to Spec, TP violates S < XP order unless XP first leaves VP
Forcing Remnant Formation in Hawaiian 2

\[ \sqrt{V-S-XP} \]

\[ V \ldots t_{XP} \]

\[ \text{TP} \]

\[ \text{VP} \]

\[ T' \]

\[ T_0 \]

\[ t_{T_0} \]

\[ \text{DP} \]

\[ \text{vP} \]

\[ \text{XP} \]

\[ v^0 \]

\[ \text{t}_{VP} \]

\[ \text{V-XP-S} \]

\[ * \]

\[ \text{Syntax} \]

\[ \text{Conclusion} \]

\[ \text{Consequences for Inflectional Morphology} \]
Allowing XP-Movement in English

subject will move . . .
Conclusions for VP-Mvmt Analysis

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- The cyclic linearization approach, which refers to surface strings in addition to structure, can account for V-S-O and V-S-XP word order
Conclusions for VP-Mvmt Analysis

• VP-fronting can explain a range of data in Hawaiian
• The case-based analysis of remnant formation faces empirical and theoretical challenges
• The cyclic linearization approach, which refers to surface strings in addition to structure, can account for V-S-O and V-S-XP word order
• This model also derives the general inability for VP-internal elements to escape VP in VP-fronting languages (Aldridge 2004, Chung 2005, Oda 2005, Polinsky & Potsdam 2007)
Innovations and Future Directions for VP-Mvmt Analysis

- I proposed a *visibility condition* on linearization
- I argued that linearization should occur *maximally* cyclicly, i.e. whenever anything happens within the syntax
- I plan on applying the linearization system to several new domains, including:
  - Subject/object asymmetries formerly understood in terms of the Empty Category Principle
  - Derivational cyclicity and the Proper Binding Condition
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Real Conclusion
In this section I argue that T-C head movement also applies in addition to VP-fronting.

The evidence consists of morphological alternations in sentence-embedding.
The Morpho-Syntax of C & T in English

- C and T are morphologically independent in English:
  
  \[(19) \text{I know that you go/went to Vollum everyday.}\]

- C can vary by context, e.g. standard embedding vs. relative clause:
  
  \[(20) \begin{align*}
  &\text{a. I think that you know.} \\
  &\text{b. The griffin is an animal which is the king of all creatures.}
  \end{align*}\]

- T moves to C in certain environments, e.g. questions:
  
  \[(21) \text{Do you \(t_{\text{tense}}\) enjoy the Oregon coast in the winter?}\]
There's a well known alternation in pre-verbal particles in (at least) Eastern Polynesian languages like Hawaiian, Maori, Tahitian, etc. (Otsuka, 2006):

(22) a. Ua kokua ka maka’i i ke keiki.
    PAST help the officer OBJ the child
    The police officer helped the child.

b. Ke keiki i kokua ai ka maka’i.
    the child PAST help RESPRO the officer
    The child whom the police officer helped. (Hawkins, 1982)
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- The conditioning factor has generally been taken to be independent vs. subordinate clause (Elbert & Pukui 1979, Hawkins 2000, Otsuka 2006)

- An identical alternation holds for present tense *ke* which appears as *e* in relative clause contexts
However, no alteration is observed in 'plain' embedding:

(23) Ua ha’i mai ke haumana ua hala ka manawa.
PAST tell DIR/ASP the student PAST pass the time
The student said that the time had passed. (see also (1) above and further examples in Hawkins, 1979)
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The difference between relative clause and plain embedding suggests that the morphological alternation is conditioned by type of subordinate clause.
This suggests that the $C^0$ position in Hawaiian encodes features of both clause type and tense.

In the case of past tense *ua*, this appears as *ua* in all 'plain' contexts, which includes all matrix clauses, and *i* in some subordinate clauses, e.g. relative clauses.

This can be modeled by head movement, i.e. the T-head moves and adjoins to the C-head.\(^1\)

\(^1\)see Massam (2010) for similar arguments w.r.t. Niuean
Head Movement in Hawaiian

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Real Conclusion
The T-C movement analysis allows us to derive another fact about the verbal system in Hawaiian, namely that tense particles precede the verb.

The verb is not initial. Instead, an independent tense head - also present in more familiar languages like English - precedes the verb.
Conclusions for Head Mvmt Analysis

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- Tense and the verb are separated in Hawaiian as in English
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- The descriptive term VSO fails to capture the tense-initial syntax of Hawaiian
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Real Conclusion
Structure of Hawaiian: Conclusion

- VSO separates the verb and object in pronounced structure
- We can allow the verb and its complement to be a constituent at some level, upon adopting a derivational analysis of VSO
- Two sub-analyses motivated the proposed surface structure: i) VP-fronting, and ii) T-C head movement
Are all VSO languages created equal?

- Hawaiian: VP-remnant fronting
- Irish: Head Movement (Guilfoyle 1990, McCloskey 1991 & 2005, slightly modified)
Morphological Consequences for Syntactic Analysis 1

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- Irish verbs, moving head-to-head, should be able to 'pick up' pieces of inflection, just like verbs in unambiguous head-raising languages, e.g. French (Pollock 1989).
- Irish verbal inflection includes morphology for a number of categories, including tense, person, and mood (McCloskey & Hale 1984):

  (24) cuirim (I put), cuireann (you put)
  (25) chuirfinn (I would put), chuirfea (you would put)
Morphological Consequences for Syntactic Analysis 2
Conclusions for Morphology/Syntax Interaction

- VSO can be derived in at least 2 ways
- Choosing the ‘right’ derivation for VSO has been seen as a problem for linguistic theory (McCloskey 2005, et alia)
- Consideration of morphology and its interaction with syntax reveals that VP-remnant movement and head movement are both motivated, depending on the language
- The coexistence of 2 derivational possibilities for VSO is not a problem, but in fact desirable
- Thank you!
Selected References

References

- Massam, Diane. 2010. V1 or V2?: On the left in Niuean. Lingua 120, 284-302.
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Where to go now:

- Learn Hawaiian (at home):
Where to go now:

- Learn Hawaiian in Honolulu (field trip!):
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- Learn Hawaiian in Honolulu (field trip!):
Where to go now:

- Learn Hawaiian in Hilo (field trip!):
Where to go now:

- Other Polynesian languages:
  - Marquesan
  - Tuvaluan
  - etc.

- Many open theoretical & descriptive questions

Thank you!