

The Syntax-Phonology Connection of Clitics: Klavans (1984,1985) & Halpern (1995)

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Introduction

- Following the early investigations of Zwicky and Zwicky & Pullum, who were mainly concerned with English, a number of people broadened the empirical basis by looking at other languages
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- Zwicky issued two influential volumes of empirical descriptions and theoretical modellings of clitic systems in the world's languages.
- And in many cases people started to pay more attention to the phonological properties of clitics.

Klavans (1984,1985)

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- Her theoretically guided typology of clitics proved very influential and her theoretical conclusions are still relevant and often cited.
- Klavans' dissertation is from 1984 but was only published in 1994 and the influential paper "*The independence of phonology and syntax in cliticization*" that summarizes a portion of the dissertation was published in 1985.

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- According to the system Klavans develops, all clitics as phrasal affixes and appear within inside the phrase they modify.
- Clitics, in her system, subcategorize at a phrasal level whereas affixes subcategorize at a lexical level:

- (1) a. $[_A \text{ in- } [_A$ *affix*
 b. $]_{N'} =s]_{N'}$ *clitic*

- Klavans proposed three parameters to account for the morphosyntactic placement *and* the choice of prosodic host word of a clitic:
 - ❶ Dominance (values: initial/final):
Whether a clitic attaches to the left side of the phrase or to the right side.
 - ❷ Precedence: (values: before/after):
Whether a clitic attaches before or after the peripheral word.
 - ❸ Liason: (values: proclitic/enclitic):
Whether a clitic is phonologically left- or right-leaning.

- According to this system, the placement determined by the first two parameters can locate the clitic in four different positions inside a phrase α :

(2) $[\alpha \textcircled{1} A \textcircled{2} B \dots C \textcircled{3} D \textcircled{4}]$

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(2) $[\alpha \textcircled{1} A \textcircled{2} B \dots C \textcircled{3} D \textcircled{4}]$

- The positions thus have the following values:
 - ① initial-before
 - ② initial-after
 - ③ final-before
 - ④ final-after

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- Crucially, the Liason parameter is formally independent from the other two parameters:
 - ↪ In other words, the direction of Liason is not predictable from the syntactic placement properties of a clitic
 - ↪ And neither are the placement properties predictable from the direction of liason.

- Three independent parameters predict 8 logical combinations of clitic properties:
- (3)
- a. initial-before-proclitic
 - b. initial-after-proclitic
 - c. final-before-proclitic
 - d. final-after-proclitic
 - e. initial-before-enclitic
 - f. initial-after-enclitic
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- Including e.g. cases of second-position clitics which are nonetheless right-leaning. (3-c) would be such a case:

- (4) $[\alpha \text{ A cl=B ... C D }]$

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- The last point is a particularly surprising prediction since many people have formulated the idea that a second-position clitic is located in that position because of its enclitic nature.
- Further, it is predicted that there are second-to-last position clitics, something which has occasionally been doubted (most notably by Kayne 1994).
- Nonetheless, Klavans argues at length that all eight logically possible subtypes are in fact attested and thus the formal independence of all three parameters is “proven”.

①: Initial - Before - Enclitic: (Domain N')

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Clitic Determiners in Kwakwala:

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Clitic Determiners in Kwakwala:

- We have already seen the dual citizenship status of Kwakwala determiners. Morphosyntactically, they belong to what's to the right but phonologically, they lean to the left:

(5) nəp'idi-da gənənəm=xə guk^w=sə t'isəm
 throw-DEIC child=OBJ.DET house=OBL.DET rock
 'The child hit the house with a rock.' Klavans (1985)

②: Initial - Before - Proclitic: (Domain N')

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- These are standard NP/DP-initial articles/determiners which cliticize to whatever comes next:

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- a. a=grey house.
 - b. an=orange house.

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- These are standard NP/DP-initial articles/determiners which cliticize to whatever comes next:
 - (6) a. a=grey house.
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- These are simple clitics, their morphosyntactic placement does not indicate whether they are clitics or independent words. Only their morphophonology may give it away.

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Ngiyambaa clausal enclitics:

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Ngiyambaa clausal enclitics:

- These are the widely attested second-position clitics found in countless languages.

↪ In Ngiyambaa, the subject duality marker encliticizes to the first word whatever that may be

- (7)
- a. ngindu=bula dhi:rba-wa-nha ngiyambaa ngiya-li
 2.NOM=DUAL know-GET-PRES Ngiyambaa speak-PURP
- b. dhi:rba-wa-nha=bula ngiyambaa ngiya-li
 know-GET-PRES=DUAL Ngiyambaa speak-PURP
 'You two are learning to speak Ngiyambaa.'

④: Initial - After - Proclitic: (Domain S)

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Tepecano Pronouns

- This would be a second position clitic which leans to the right (i.e. it is proclitic). Such a case comes according to Klavans from Tepecano:

(8) ndedos n=an=ahohoinda
 my.fingers INTRODUCER=CL.PRON=shake.FUT.3.PL.OBJ
 'I will shake my fingers.'

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- Note that the data are not reliable here and in general this type seems to be relatively rare.

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Object agreement clitic in Nganhcara

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Object agreement clitic in Nghanhcara

- This is the mirror image of the Tepecano case: A second-to-last position clitic that leans to the left.
- The object pronoun typically attaches to whatever precedes the clause-final verb:

(9) nhila pama-ng nhingu pukpe-wu ku[?]a=ngu wa:.
 he.NOM man-ERG him.DAT child.DAT dog=DAT.3SG give
 'The man gave the dog to the child.'

(10) ku[?]a nhingu pukpe-wu nhila pama-ng=ngu wa:.
 dog him.DAT child.DAT he.NOM man-ERG=DAT.3SG give
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- An element procliticizing to the final element of a given domain.
- Klavans admits that she has found no convincing case for this pattern.
- In many head-final languages, negation procliticizes to the verb; but such cases cannot be viewed as of this type.

(11) mal-en ok=kert
 sleep-INF NEG.PRES=can
 'He cannot sleep.'

Meadow Mari

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- To make things even cooler, the second-to-last position clitic triggers reduplication of the last element in cases where there is only one element in the conjunct:

(13) jett laq=[?]a laq-aa b-el-ar
 cow go.dry=CC go.dry-ANT.CVB AGR-die-PAST
 'The cow stopped giving milk and died.'

⑧: Final - After - Proclitic: (in the domain of S)

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- Klavans claims that what she calls stranded proclitics in Ancient Greek are a case of this sort which typically cliticize to the right but can be stranded for some stylistic reasons:

- (14)
- a. ek=Spártēs
out.of=Sparta
 - b. kakōn éks
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- But the pattern is clearly insufficient as we would like to see what happens in an actual sentence with something following the stranded clitic.

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- Klavans proposes a theoretically informed typology which models the placement and the direction of cliticization of a clitic.
- Clitics in her account are phrasal affixes which are lexically specified for three parameters.
- These parameters are formally independent meaning that, in principle, every logical combination should exist.
 - ↪ Klavans argues at length that this prediction is in fact borne out.

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- But there are of course quite a number of things to criticize about this approach:
- First, the study suffers from crucial empirical problems: For a number of combinations, the examples Klavans gives are far from convincing and probably need to be looked at more carefully.
 - The approach clearly understates the crosslinguistic distribution of the different types. There are only very few second-to-last position clitics whereas second-position clitics are all over the place.

- Further, as Klavans herself notes, the typology fails to account for clitics which consistently attach to the head or highest constituent of a given constituent.
 - ↪ Romance argument clitics consistently attach to the verb.
 - ↪ Amharic determiners clitics attach to the highest constituent in the NP/DP (Kramer 2010).
- We have also seen focus-sensitive clitics which attach to any focus-bearing element in a given domain (typically S)
- And last but not least, the typology fails to account for the fact that it does not really define second-position.
 - ↪ We find second-position effects where the first position is defined as a morphosyntactic word/constituent and those where it is a phonological word.

Prosodic Inversion: Halpern (1995)

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- According to him, second-position clitics (2P-clitics) distinguish (at least) two different descriptive phenomena:
 - Second Word Clitics (2W): The clitic attaches to the first word of the respective domain.
 - Second Daughter Clitics (2D): The clitic attaches to the first syntactic constituent of a respective domain.

- Some languages have only one of those two:

- Some languages have only one of those two:
- Czech seems to have only 2D-clitics, i.e. the auxiliary clitics always attach after the first constituent (much like the verb in V2-languages)

- (15) a. Ten básník=mi čte ze své knihy
 That poet=TO.ME reads from his book
 'That poet reads to me from his book.'
- b. *Ten=mi básník čte ze své knihy
 That=TO.ME poet reads from his book

- Ancient Greek however seems to have (almost) only 2W-clitics:

(16) tōn=d' álōn há=moi ésti
 the.GEN=PTCL others.GEN which=me are
 'But whatever of these others is mine...'

- In many languages, clitics can appear in 2W- or 2D-position:

(17) a. Taj=je čovek voleo Mariju
 that=AUX.3SG man love.PTCP Maria

b. Taj čovek=je voleo Mariju
 that man=AUX.3SG love.PTCP Maria
 'That man loves Maria.'

BCS

(18) a. wiiwiš ʔaxaat=up naʔq
 wewish delicious=AUX burning

b. wiiwiš=up ʔaxaat naʔq
 wewish=AUX delicious burning
 'That delicious wiiwish is burning.'

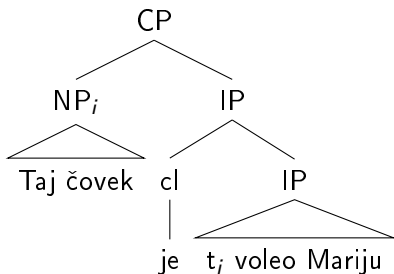
Uto-Aztecán

Luiseño,

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- In languages where both 2W and 2D are attested, we can study the relation between the two and where the (apparent) optionality breaks down.
- And, doing that, Halpern argues that 2D is generated by means of syntactic movement of a syntactic constituent to a position above the clitic; similar to a V2-language:

(19)



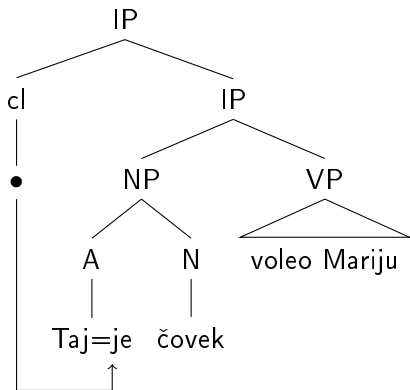
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- This process is a *Last Resort* operation that applies in order to supply the clitic with a prosodic host.
 - ↪ Since the clitic requires a prosodic host, it switches the position with the minimally available phonological constituent (typically a word).

- Crucially, 2W-clitics are not generated by syntactic movement. Rather, they are generated by a process Halpern calls *Prosodic Inversion*.
- This process is a *Last Resort* operation that applies in order to supply the clitic with a prosodic host.
 - ↪ Since the clitic requires a prosodic host, it switches the position with the minimally available phonological constituent (typically a word).
- This *Last Resort* operation is triggered if and only if there is no prosodic host to the left of the clitic.
 - ↪ In (19), Prosodic Inversion is bled by topicalization of the NP to the peripheral position.

Prosodic Inversion:

(20)



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- Thus, the optionality must be placed in the syntax. Movement of an NP across the clitic is optional; PI is not.
- Thus, in languages which only exhibit 2D or 2W, we must make sure that the syntax is correctly stated:
 - 2D-only languages such as Czech *must* move some element above the clitic (similarly to V2 languages)
 - 2W-only languages such as Ancient Greek must not move some element above the clitic.

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- And that is borne out: In embedded clauses where there is a complementizer above the clitic, the optionality of 2D vs 2W breaks down. In this case, Prosodic Inversion is impossible:

- (21) a. Ja mislim da=je ona kupila šesir
 I think COMP=AUX she buy.PTCP hat
- b. *Ja mislim da ona=je kupila šesir
 I think COMP she=AUX buy.PTCP hat
 'I think she bought the hat.'

BCS

- Further, it makes the nice prediction that even if a language allows for both 2D and 2W, multiple clitics will still have to appear in one and the same position.

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- Again, this is borne out for BCS:

- (22)
- a. Taj čovek=joj=ga=je poklonio
That man=her=it=AUX presented
 - b. Taj=joj=ga=je čovek poklonio
That=her=it=AUX man presented
'That man presented her with it.'
 - c. *Taj=joj=ga čovek=je poklonio
That=her=it man=AUX presented

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- His main arguments can be summarized as follows:
 - ① Discontinuous constituency is not available in many languages.
 - ② The notion of Leftmost node in 2W-contexts is a prosodic one, not a syntactic one.
 - ③ The syntactic movement processes required to make a syntactic account work violate well-known islands.

Discontinuous Constituency

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- One could try to save a syntactic account by proposing that in these cases, only a subconstituent moves to the position before the clitic.
 - ↪ This has been done extensively by Klavans (1985) for Ngiyambaa.
 - ↪ Klavans shows that in Ngiyambaa, constituents can be separated by movement independently of the clitic placement.

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 - ↪ This has been done extensively by Klavans (1985) for Ngiyambaa.
 - ↪ Klavans shows that in Ngiyambaa, constituents can be separated by movement independently of the clitic placement.
- ▶ But it can be shown quite clearly that this does not work in all 2W-languages (including BCS, etc.)
 - ↪ These languages do not allow movement of a definite article away from the NP it modifies.

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 - ↪ If a subconstituent can move to a position before the clitic, we would certainly expect a complete constituent to be able to move there as well.
- Further, depending on the size of the subconstituent, such an account might predict more options than attested.

- (23)
- a. ʔawaal=up yawaywiš popuš ney toowwwun
 dog=AUX beautiful eyes.3SG me looking.3PL
 'The beautiful dog's eyes are looking at me.'
 - b. *ʔawaal yawaywiš=up popuš ney toowwwun
 - c. ʔawaal yawaywiš popuš=up ney toowwwun

Luiseño, Uto-Aztecan

The notion of the leftmost node

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The notion of the leftmost node

- Further, it can be shown that, in 2W-cases, the notion of first word is a phonological/prosodic one and not a syntactic one.
- Mismatches seem to occur in both directions:
 - If the first word does not constitute its own phonological word, it is skipped for the purposes of determining 2W:

- (24) a. U ovoj=je sobi klavir
 in this.AUX room piano
 'The piano is in this room.'
- b. U=je ovoj sobi klavir

↪ A light preposition itself is not a phonological word by itself (Inkelas 1989) but subcategorizes for a prosodic host (ω).

- In some cases, the 2W-clitic might also cliticize inside a word if the word consists of multiple phonological words or the clitic subcategorizes for a prosodic unit smaller than a prosodic word (i.e. a foot).
- ↪ In Pashto, perfectivity is marked by stress shift to the first syllable. The subject agreement clitic follows the stress-bearing foot.

- (25)
- | | | |
|----|---------------------|--------------|
| a. | Telwαhə=me | |
| | push=1SG | |
| | 'I was pushing it.' | Imperfective |
| b. | Tél=me=wαhə | |
| | push=1SG=push | |
| | 'I pushed it.' | Perfective |

- ↪ This requires prosodic subcategorization of the clitic for different elements in the prosodic hierarchy.

Syntactic Islands:

- One of the clearest indicator for 2W-clitics are cases where the clitic appears inside syntactic islands and therefore, a syntactic analysis in terms of movement violates well-known constraints:
- We have already seen some of those:
 - Left-Branch extraction
 - Relative clause islands
 - Coordinate Islands:

- (26) Juáàny-chà' gù Màríí ù-dáù còmíiàd
 Juan=maybe or Maria COMPL-eat food
 'Maybe either Juan or Maria ate the food.'
 Ocotepc Zapotec (Bye & Svenonius 2011:480)

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 - ↪ PI is a *Last Resort* operation that only applies if the output of the syntax does not match prosodic requirements of the clitic.
 - ↪ This models the complementary distribution of 2W-clitics with syntactically generated 2D-clitics.
 - ↪ PI ignores syntactic constituency and even islands
 - ↪ Also PI targets phonological words (not syntactic ones).

A couple of additional notes:

- ➊ Skipping & the notion of domains:
 - PI inverts a clitic with an element to avoid the initial position.

A couple of additional notes:

① Skipping & the notion of domains:

- PI inverts a clitic with an element to avoid the initial position.
- But this assumption seems problematic in the light of examples like the following:

(27) Ove godine, taj=mi=je pesnik napisao knjigu
this year that=me=AUX poet wrote book
'This year, that poet wrote me a book.'

- Why does the clitic undergo PI?

- The answer is, of course, that the clitic wants to be non-initial in a given domain.
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- This assumption is backed up by prosodic tests which suggest that skipped material is typically set off with a prosodic break from the rest of the clause.
- Further, there are prosodic requirements on skipped material (i.e. that it is phonologically heavy (Zec & Inkelas 1990))

- ② Fortresses: A second (maybe more problematic) complication is that some material does not allow 2W-clitics inside it.

- (28) a. %Lav=je Tolstoj veliki ruski pisac
 Leo=AUX Tolstoi great Russian writer
 'Leo Tolstoi is a great Russian writer.' Proper Names
- b. %Sestra=će i njen muž docí.
 sister=FUT and her husband come
 'My sister and her husband will come.' Coordination
- c. Studenti=su iz Beograda upravo stigli
 students=AUX from Beograd just arrived
 'Students from Beograd have just arrived' Postnom. Mod.

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- For a coordinate structure we also might envisage a cyclicity solution:
 - ↪ Prosodic domains are typically not recursive but Wagner (2005) claims that coordination structures are (or can be) an exception to this rule
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- Clearly more work needs to be done to implement this formally but I think a solution should be possible.

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- Halpern works in a lexicalist framework where all morphology is dealt with presyntactically
- But the interactions of syntax and prosody clearly indicate that PI happens *after* syntax.
- He thus designs PI as a phonological operation applying postlexically after syntax.
 - ↔ The necessity of PI shows that there must be some non-trivial postsyntactic operations.

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 - ↪ He discusses some apparent counterexamples (especially of second-position determiners) arguing either that the alternation in question is not allomorphy or that they are not 2P-clitics.
- As a somewhat puzzling aside: In recent DM-like models where PI is sometimes subsumed under a Local Dislocation operation, we seem to make the weird but definitely interesting prediction that 2D-clitics should be able to show allomorphy while 2W-clitics should not.

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 - Deletion: Maybe the 2P-clitic is deleted when it appears in first position.
 - Insertion: Maybe a dummy-morpheme is inserted in first position.
- So far, cases of this sort have not been found (with possibly the exception of the reduplication pattern above in Ingush) but it might be interesting to think about what they would look like.

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 - ↪ Thus, the syntax feeds/bleeds positioning of clitics.
- As a result, not all combinations are possible:
 - ↪ 2W-clitics *must* to the first word. Klavans' Initial-After-Proclitic-type is predicted to not exist.
 - ↪ Halpern discusses the few cases of this type (e.g. Tepecano) and offers alternative explanations for these.

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 - But Halpern points out in various places that he is not aware of a convincing example of second-to-last cliticization.
 - But in principle, PI should also be able to apply from right to left.
- More work is required to figure out whether (a) second-to-last position clitics are in fact attested and (b) why it is so rare?
 - ↪ Recent independent developments wrt. the syntax-prosody mapping have already started to provide insights into this question.

- The Prosodic Inversion approach has been taken up and further developed by many (see e.g. Legate (2008) on Warlpiri and Harizanov (2014) on Bulgarian/Macedonian)
 - ↪ See however Bošković (2001) for a critical assessment for BCS

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 - ↪ See however Bošković (2001) for a critical assessment for BCS
- Klavans typology is sometimes still used for descriptive purposes and it is interesting to go look for the types she predicts.
 - ↪ But since hardly any additional cases of the rarer clitic types have been found, the approach is somewhat outdated.