The Northern Iroquoian Nominal Phrase and Linguistic Variation[*]
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Plan: i. Discuss the structure of the Northern Iroquoian DP
      ii. Situate this wrt our understanding of linguistic variation
      iii. Discuss some problems with macroparametric approaches
      iv. Suggest a (tentative) structured microparametric approach along the lines
           of Roberts' *Parameter Hierarchies*

1   The Northern Iroquoian DP

1.1   Minimal structure for free nouns

(1)   NPREF-root-NFS

    noun prefix (NPREF): usually corresponds to neuter agreement
                            inanimate N – agrees with possessor
                            animate/human N – agrees with referent

    noun forming suffix (NFS): usually arbitrarily one of two suffixes
                                 Onondaga – correlates to human / non-human

➢Onondaga examples:

(2)   a.   oyǫ́:daʔ   b.   onę́haʔ
         o-   yǫt-   aʔ   o-   nęh-   aʔ
         NPRE- beak- NFS   NPRE- corn- NFS
         'beak'   'corn'

(3)   a.   ganákdaʔ   b.   ganáʔjyaʔ
         ka-   nakt-   aʔ   ka-   naʔjy- aʔ
         NPRE- bed-   NFS   NPRE- bucket-NFS
         'bed'   'bucket'

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(4)   a.   agǫ́:gweh   b.   dehnǫ́:gweh
                ak-   ǫkwe- h   tehn-   ǫkwe- h
                3.SG.F person-NFS   3.DU.M   person-NFS
                'woman'   'two men'

(5)   a.   age-ˀse:hd-aˀ   b.   swa-ˀse:hd-aˀ
                1.SG.POSS-car-NFS   2.PL.POSS-car-NFS
                'my car'   'your car (plural)'

➤supports fairly standard view of nominal structure.

(6)   … > AgrP > *n*P > NP (or √P)

1.2   Demonstratives and Quantifiers

➤Can appear adjacent to their restriction or can be discontinuous.

(7)   a.   Mary aˀesˀah gwe:gǫh neˀ ohyaˀ
                Mary she.ate all   NE apple
                'Mary ate up every apple.'   [Cayuga]

        b.   gwe:gǫh aˀesˀah neˀ ohyaˀ neˀ Mary.
                all   she. ate NE apple NE Mary
                'Mary ate up every apple.'   [Cayuga]

(8)   a.   John   hahyagoˀ   nęgyęh jisǫdak
                John   picked   this   strawberry
                'John picked this strawberry'   [Onondaga]

        b.   nęgyęh   ahahyagoˀ   jisǫdak   neˀ   John
                this   picked   strawberry   NE   John
                'John picked this strawberry'

➤parsimonious analysis: adjacency is coincidental (Koenig & Michelson 2015; Mithun 1987)

➤Constituency confirmed by 2P clitics and long-distance movement

(9)   [nęgyeh ohyadrȩhsyǫndoh] **gȩh**   ahadadríhǫnyęh neˀ Hawȩni:yo:
                this   book   **QN**   he read it   NE   H.
                'Did Haweniyo read this book?'

➤possible with *gwe:gǫh*

(10)   a.   Gwe:gǫh ohyadrȩhsyǫndoh   gȩh   ahadadríhǫnyȩh ne² Hawȩni:yo:
                 all   book   QN   he read it   NE   H.
                 'Did Haweniyo read all the books?'

         b.   ? gwe:gǫh ohya²   gȩh ahadi̱hsa:²   ne² hadiksasǫ²ah.
                 all   fruit QN   they ate it NE boys
                 'Did the boys eat all the apples?' (NOT: 'Did all the boys eat the apples?')

(11)   **gwe:gǫh so:wa:s so²ah**, John ahȩ² Hawȩnagǫh ahaya²dǫhaihǫ
         all   dog-PL   J   he said H   he body-washed it
         'All the dogs, John said that Hawenago washed them.'

➢Evidence that Q is a A-type quantifier (Barrie 2017) – higher than D

➢Split demonstratives: gives focus reading
                              DEM …. N order only
                              N … DEM order impossible (contrasts with Warlpiri, Hale 1983)

➢Onondaga data

(12)   a.   thó:gȩh   wahanasgwahní:nǫ² jihah ne²   John²
                 that   he.animal.bought.it   dog   NE   John
                 'John bought THAT dog.'

         b.   * thó:gȩh   sǫh   wa²ȩnasgwahnínǫ²   jihah?
                 that   who   she.animal.bought.it   dog
                 ('Who bought THAT dog?')

➢Incompatible with *wh*-movement (focus-fronting – i.e., from argument position)

➢Interrogative determiner also part of DP (Onondaga, Barrie 2015)

(13)   a.   Gaȩnigae² wa²enasgwahní:nǫ ²?
                 kaȩnikáe²   wa²-   s-   naskw-   a-   hninǫ -²
                 which   FACT- 2.SG-   animal-   JOIN- buy   -PUNC
                 'Which animal did you buy?'

         b.   nwadȩ² wa²snasgwahní:nǫ²
                 nwadȩ²   wa²-   s-   naskw-   a-   hninǫ- ²
                 what   FACT- you-   animal-   JOIN- buy-   PUNC
                 'What did you buy?' (kind of animal presupposed)

         c.   gaȩnigáe² gwíhsgwihs wa²snasgwahní:nǫ²
                 kaȩnikáe²   kwihskwihs   wa²-   s-   naskw- a-   hninǫ- ²
                 which   pig   FACT- 2.SG-   animal- JOIN- buy- PUNC
                 'Which pig did you buy?'

d.   gaęnigáeˀ waˀsnasgwahní:nǫˀ gwíhsgwihs
        kaęnikáeˀ   waˀ- s-   naskw- a-   hninǫ- ˀ   kwihskwihs
        which   FACT- 2.SG- animal- JOIN- buy-   PUNC   pig
        'Which pig did you buy?'   (from field notes)

e.   Gaęnigaeˀ   gwíhsgwis   shé:heˀ   Mary   waˀenasgwahní:nǫ ˀ?
        which   pig   you.think   Mary   she.animal-bought.it
        'Which pig do you think Mary bought?'

➢last example: long-distance movement of [which pig] → constituent

➢Dem, Quant, *which* form a constituent with N

➢left-branch extraction possible

1.3   Articles

➢The form *ne(ˀ)* roughly means "the" (Mithun 2015) – found in all Northern Iroquoian lg's

➢Mithun: means "the aforementioned X"

➢Takes wide-scope wrt repetitive (iterative) marker (Barrie 2014)

(14)   a.   John asha:hyak swahó:waˀ   [Cayuga]
                John   a-s-ha-ahy-a-k-Ø   swahó:waˀ
                John   FACT-REP-3SG.M.AG-fruit-JOIN-eat-PUNC   apple
                'John ate an apple again.' [a different apple]

        b.   John asha:hyak neˀ swahó:waˀ
                John   a-s-ha-ahy-a-k-Ø   neˀ swahó:waˀ
                John   FACT-REP-3SG.M.AG-fruit-JOIN-eat-PUNC   NE apple
                'John ate an apple again.' [must be the same apple → absurd reading]

➢syntax unclear

context: focus on 1st person: "You know Mary ate someone's apple. You want to know whether she ate *your* apple in particular."

(15)   Mary gęh aˀǫhyak neˀ i: aga:węh ohyaˀ   [Cayuga]
        Mary   kęh   aˀ-ǫ-hya-k-Ø   neˀ   i: ak-awęh   ohyaˀ
        Mary   Q   FACT-3SG.F.AG-fruit-eat-PUNC   NE   1   1-have   apple
        'Did Mary eat *my* apple?'

➢article appears with focussed pronoun

context: "I know Mary ate something of yours, so I ask if she ate your apple. You respond that she ate your banana."

(16)   Thẹh, neʔ neʔ onaʔgá:ʔ neʔ aʔe:k   [Cayuga]
         Thẹh   neʔ   neʔ   onaʔgaʔ   neʔ   aʔ-e-k-Ø
         no   NE   NE   banana   NE   FACT-3.SG.F.AG-eat-PUNC
         No, she ate (my) banana.ʼ

➢article can be doubled and can appear on verbs

➢article can appear before the demonstrative

(17)   John ahahní:nọʔ neʔ nẹgyẹh gwihsgwihs   [Cayuga]
         John   a-ha-hninọ-ʔ   neʔ   nẹgyẹh   gwihsgwihs
         John   FACT-he-buy-PUNC   NE   DEM   pig
         'John bought this pig.'

➢article can appear after quantifier

(18)   Mary aʔesʔah gwe:gọh neʔ ohyaʔ   [Cayuga]
         Mary she.ate all   NE apple
         'Mary ate up every apple.'

➢order must be NE + N

(19)   a.   Mary aʔesʔah neʔ ohyaʔ   [Cayuga]
              Mary she.ate NE apple
              'Mary ate the apple.'

        b.   * Mary aʔesʔah ohyaʔ neʔ   [Cayuga]
              Mary she.ate apple NE
              ('Mary ate the apple.')

➢Although demonstratives and quantifiers may have variable order wrt the noun and to NE, the article NE must (it seems) appear before the noun.

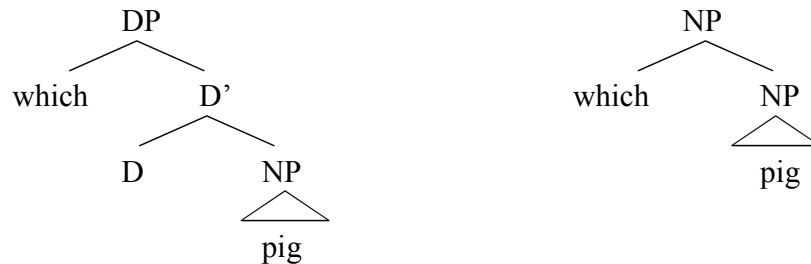➢NE seems to be an extremely good candidate for D.

1.4   Discussion

➢Evidence for extended clausal projection: CP > TP > *v*P > VP (Baker 1996; Barrie et al. 2014)

➢Evidence for DP/extended nominal projection?

➢general agreement that CP mirrors DP/KP (Grimshaw 1990; Megerdoomian 2008; Ogawa 2001; Wiltschko 2014)

➢Projection of features/labelling ("virtual" Iroquoian shown)

(20)   a.   DP analysis   b.   NP analysis

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                    DP                              NP
                  /    \                          /    \
              which    D'                     which    NP
                      /  \                            /\
                     D    NP                          pig
                         /\
                         pig
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➢*wh*-movement: can move either 'which' or 'which pig' → [*wh*] feature must appear on DP

➢NP analysis – could claim that [*wh*] feature 'percolates' to NP

    = [*wh*] feature projects and determines label

➢consistent order *which* + N → argues against adjunction structure in (20)b.

➢Distinguishing adjunction from projection (Wiltschko 2008; Wiltschko 2014)

➢Marker is obligatory for interpretation → marker projects

➢Absence of marker indicates absence of marked value → marker projects

➢Absence of marker gives rise to vague meaning → marker adjoins

➢English number projects

(21)   the dogs – plural meaning only
          the dog – singular meaning only (lack of plural does not mean lack of number)

➢Halkomelelm number adjoins (Wiltschko 2008)

(22)   a.   te   lhixw swíweles
               DET   three   boy.SG
               'the three boys'

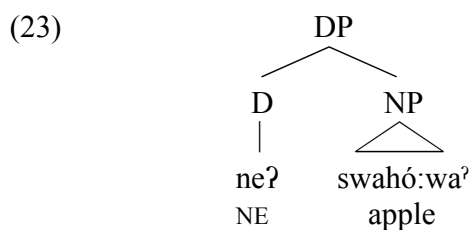   b.   te   lhixw swóweles
               DET   three   boy.PL
               'the three boys'

➢number marker (here ablaut) is not required for a plural interpretation

➤Recall (19) above: NE required for "aforementioned" reading

➤D projects

➤NE appears to be a head

→ labelling algorithm, head must project (Chomsky 2013; Ott 2014)

(23)
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              DP
            /    \
          D       NP
          |       /\
         neʔ   swahóːwaʔ
         NE      apple
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➤some details remain, evidence for the following structure:

(24)   QP > DP > AgrP > nP > NP

➤recently discussed problems with DP (Bruening 2009; Salzmann 2018)

➤V selects type of CP (declarative, interrogative, subjunctive, etc.)

➤V does not select for type of DP – definite, possessed, etc.

➤D is not the highest functional projection. K is. Many verbs do select for particular kinds of K.

➤Likewise, V does not select for particular kinds of T (past only) or particular Asp.

2   Parametric Variation

➤Language variation captured by parameters

➤Parameters must be learnable in order to explain language phenomena (see also Jeong 2016)

2.1   Macroparametric approach

➤consolidates several phenomena

➤NP/DP Parameter (Bošković 2005; Bošković 2008)

Phenomena (consider two here)

a. Only languages without articles may allow left-branch extraction

b. Polysynthetic languages do not have articles

➢Polysynthesis Parameter (Baker 1996)

Phenomena (consider three here)

a. syntactic noun incorporation
b. no true quantifiers
c. no true determiners

➢Morphological Visibility Condition (informal): V assigns theta-role (and hence Case) to a morpheme inside the verb (either agr or an incorporated noun).

➢Therefore, no DP/NP in argument position (at S structure) in polysynthetic languages.

2.2   Evaluating the NP/DP Macroparameter

➢left-branch extraction

➢clear evidence for LBE in Northern Iroquoian

➢Also found in French and Squamish (languages with determiners)

(25)   Combien   as-tu   lu   de   livres?[French; hyphen is orthographic]
        how.many   have-you   read   of   books
        'How many books did you read?'

➢Some polysynthetic languages are known to have determiners (Gillon 2013; Wiltschko 2014).

(26)   a.   Chen   tákw-an   ta   stákw.   [Squamish, (Gillon 2009)]
                 1SG.S drink-TR   DET   water
                 'I drank the water' (vague wrt location)

        b.   Chen   tákw-an   ti   stákw.
                 1SG.S drink-TR   DET   water
                 'I drank the water' (water near speaker).

➢Northern Straits Salish (closely related to Squamish) allows LBE (Davis 2013; Jelinek 1984)

(27)   mәkʷ   ʔәẇ-p̓әq   cә=sṗeqәŋ
        all   link-white   det=flower
        'All the flowers are white.' / 'The flowers are all white.'

➢We showed above that Northern Iroquoian has a determiner ➔ prototypical polysynthetic language.

➢Sufficient evidence from North America that DET = no LBE claim is not universal.

2.3   Evaluating the Polysynthesis Macroparameter

➢syntactic noun incorporation (NI)

➢N undergoes head movement to V

➢no DP or HMC would be violated (Travis 1984)

(28)   a.   S   b.   VP

              S   NP   V   NP

                   VP   NP   AP/Dem

         V   NP   N

                     N
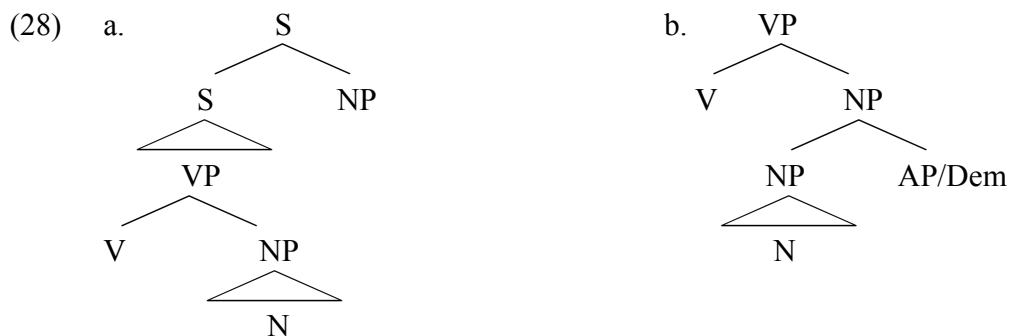
➢DP double adjoined to S (CP)

(29)   waʔgnasgwahní:nǫʔ neʔ gwíhsgwihs   [Onondaga]
        waʔ-   k-   naskw-   a-   hninǫ- ʔ   neʔ   kwihskwihs
        FACT- 1.SG.NOM - animal-   EPEN- buy- PUNC NE   pig
        'I bought pig.'

➢Existence of DP not necessarily fatal for the syntactic analysis of NI

➢V takes bare NP as a complement; full DP is adjoined to CP

➢Following data are more challenging:

(30)   a.   nwadęʔ waʔsnasgwahní:nǫʔ
                  nwadęʔ   waʔ- s-   naskw-   a-   hninǫ- ʔ
                  what   FACT- you- animal-   JOIN- buy- PUNC
                  'What kind of animal did you buy?'

        b.   gaęnigáeʔ gwíhsgwihs waʔsnasgwahní:nǫʔ
                  kaęnikáeʔ   kwihskwihs   waʔ- s-   naskw- a-   hninǫ- ʔ
                  which   pig   FACT- 2.SG- animal- JOIN- buy- PUNC
                  'Which pig did you buy?'

    c.   Gaęnigaeˀ   gwíhsgwis   shé:heˀ   Mary waˀenasgwahní:nǫ ˀ?
          which   pig   you.think   Mary she.animal-bought.it
          'Which pig do you think Mary bought?'

➢More to the point: Is DP possible in an adjoined position?

➢Presence/absence of determiners must be treated with care in examining polysynthetic languages.

➢Quantifiers cannot appear clause-externally (when a *wh*-phrase is present)

➢*wh*-XP in SpecCP, so quantifier is internal

(31)   Dęˀhoˀdęˀ   gaegwe:gǫh   agaehninǫnyǫ:ˀ
        what   they.all   they.bought.it
        'What did they all buy?'

(32) *Gaegwe:gǫh   dęˀhoˀdęˀ   agaehninǫnyǫ:ˀ
        they.all   what   they.bought.it
        ('What did they all buy?')

➢Q enters scopal relations with *wh*-XP

(33)   dęhoˀdęˀ gwe:gǫh ahadik?
        what all   they.ate
        'What did everyone eat?'   what > all OR all > what

              possible answers: i.   Everyone ate an apple.
                            ii.   John ate an apple, Mary ate an orange, …

➢It seems quantifiers can exist in argument position

➢Proposal: Northern Iroquoian NI is syntactic, but can tolerate DP in argument position.

➢Brief excursus: type III and type IV NI (Baker et al. 2005; Barrie 2015; Mithun 1984; Rosen 1989)

    type III – "compounding" no doubling or stranding, V becomes intransitive
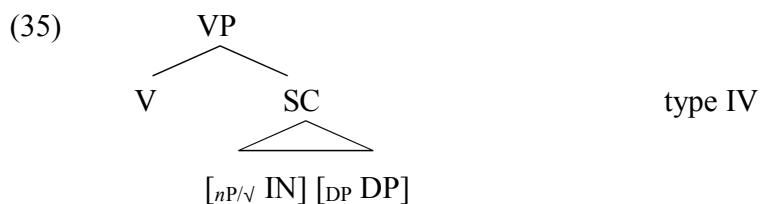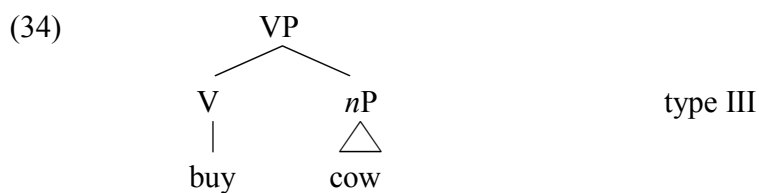
    type IV – "classifier" doubling/stranding permitted, V is still transitive

➢Northern Iroquoian – type IV

➢proposal (based on Barrie, 2015):

    type III: V takes *n*P as a complement   type IV: V takes [*n*P DP] as a complement

(34)   VP
                    ╱   ╲
                   V   *n*P   type III
                   | △
                  buy   cow

(35)   VP
                ╱   ╲
               V   SC   type IV
                      ╱   ╲
              [*n*P/√ IN] [DP DP]

➢ SC – small clause, *n*P and DP are in a subject/predicate relation

➢ Determinerless flavour comes from *n*P, which is incorporated

➢ DP is still tolerated in argument position, as it does not interfere with NI

2.4   Alternatives to Macroparameters

➢ Chomsky-Borer Conjecture holds that cross-linguistic variation is restricted to the lexicon (Kayne 2005).

➢ Fails to account for strong cross-linguistic tendencies (VO – prepositions; OV – postpositions)

➢ Intermediate approach: microparameters are hierarchically arranged, giving rise to tendencies, rather than to all-or-nothing macroparameters (Biberauer & Roberts 2015; Roberts 2016).

Is the head-final feature present on all heads?

Yes – head-final (Korean, Japanese, etc.)

No: Is the head-final feature present on no heads?

Yes – head-initial (Celtic, Romance)

No: Is it present on [+V] categories?

Yes – German SOV

No: etc.

3   Discussion

➢Dissociate D head from macroparameters

➢Make room for variation (with or without D, etc)

➢Should the order of macroparameters (in the sense of Roberts) somehow mirror acquisition?

➢we need to account for difference in type III and type IV noun incorporation

➢Possible microparameters:

 Does nP associate with a prosodic boundary? [children acquire prosody early]

       Yes – nP can be free: pseudo NI - (Massam 2001), but see (Clemens 2014)

       No – nP is bound (NI may boil down to prosodic constraints, Richards 2016)

          Can V take nP as a complement?

             No – no NI (but DP is morphologically complex)

             Yes – type III NI

                Can nP appear with DP in a small clause?

                Yes – type IV NI

➢Conclusions?

➢NP/DP Macroparameter must be loosened to allow for the presence of determiners and LBE in one and the same language.

➢Polysynthesis Parameter must be loosened to account for DPs in argument position.

➢Cross-linguistic, typological studies in language variation/parameterization must start from an in depth understanding of a small number of languages/families (Davis et al. 2014; Matthewson 2011)   → NP/DP Parameter: Slavic lg's
          → Polysynthesis Parameter: Mohawk
          → typological studies require true research collaboration

References

Baker, Mark C. 1996. The Polysynthesis Parameter Oxford: Oxford University Press.

Baker, Mark C., Roberto Aranovich & Lucía A. Golluscio. 2005. Two types of syntactic noun incorporation: Noun incorporation in Mapudungun and its typological implications. Language 81.138-76.

Barrie, Michael. 2014. Unaccusativity and the VP node in Cayuga. Canadian Journal of Linguistics 59.235-42.

—. 2015. Two kinds of structural noun incorporation. Studia Linguistica 69.237-71.

—. 2017. *All* in Cayuga. Paper presented at the Society for the Study of Indigenous Languages of the Americas, Austin, TX.

Barrie, Michael, Inkie Chung & Roronhiakehte Deer. 2014. Clitics and the Left Periphery in Cayuga. Studies in Generative Grammar 24.1-26.

Biberauer, Theresa & Ian Roberts. 2015. Rethinking formal hierarchies: a proposed unification. Cambridge Occasional Papers in Linguistics 7.1-31.

Bošković, Željko. 2005. On the Locality of Left Branch Extraction and the Structure of NP. Studia Linguistica 59.1-45.

—. 2008. What Will You Have, DP or NP? Paper presented to the NELS 37, Amherst, MA, 2008.

Bruening, Benjamin. 2009. Selectional Asymmetries between CP and DP Suggest that the DP Hypothesis is Wrong (ed.) U.o. Delaware.

Chomsky, Noam. 2013. Problems of projection. Lingua 130.33-49.

Clemens, Lauren. 2014. The prosody of Niuean pseudo noun incorporation: A recursion-based analysis. Paper presented to the Proceedings of the 44th Meeting of the North East Linguistic Society, 2014.

Davis, Henry. 2013. All about *All* in (some) Salish Languages. Strategies of Quantification, ed. by K.-H. Gil, S. Harlow & G. Tsoulas, 214-59. Oxford: Oxford University Press.

Davis, Henry, Carrie Gillon & Lisa Matthewson. 2014. How to Investigate Linguistic Diversity: Lessons from the Pacific Northwest. Language 90.180-226.

Gillon, Carrie. 2009. Deictic Features: Evidence from Skwxwú7mesh. International Journal of American Linguistics 75.1-27.

—. 2013. The Semantics of Determiners: Domain Restriction in Sḵwx̱wú7mesh New Castle upon Tyne: Cambridge Scholars Publishing.

Grimshaw, Jane. 1990. Argument Structure Cambridge, MA: MIT Press.

Hale, Ken. 1983. Warlpiri and the Grammar of Non-Configurational Languages. Natural Language and Linguistic Theory 1.5-47.

Jelinek, Eloise. 1984. Empty categories, case, and configurationality. Natural Language & Linguistic Theory 2.39-76.

Jeong, Youngmi. 2016. Macroparameters break down under the weight of evidence: The "NP/DP" parameter as a case study. Rethinking Parameters, ed. by L. Eguren, O. Fernández-Soriano & A. Mendikoetxea, 236-51. Oxford: Oxford University Press.

Kayne, Richard. 2005. Movement and Silence New York, NY: Oxford University Press.

Koenig, Jean-Pierre & Karin Michelson. 2015. Invariance in argument realization: The case of Iroquoian. Language 91.1-47.

Massam, Diane. 2001. Pseudo Noun Incorporation in Niuean. Natural Language & Linguistic Theory 19.153-97.

Matthewson, Lisa. 2011. How (not) to uncover cross-linguistic variation. Paper presented at the NELS 42, University of Toronto.

Megerdoomian, Karine. 2008. Parallel nominal and verbal projections. Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud, ed. by R. Freidin, C.P. Otero & M.L. Zubizarreta, 73-103. Cambridge, MA: MIT Press.

Mithun, Marianne. 1984. The Proto-Iroquoians: Cultural reconstruction from lexical materials. Extending the Rafters, ed. by J. Campisi, M.K. Foster & M. Mithun, 259-82. Albany, NY: SUNY Press.

—. 1987. The grammatical nature and discourse power of demonstratives. Paper presented to the Proceedings of the Thirteenth Annual Meeting of the Berkeley Linguistics Society, Berkeley, CA, 1987.

—. 2015. Discourse and Grammar. The Handbook of Discourse Analysis, ed. by H. Hamilton, D. Schiffrin & D. Tannen, 9-41. Hoboken, NJ: John Wiley & Sons.

Ogawa, Yoshiki. 2001. A Unified Theory of Verbal and Nominal Projections Oxford: Oxford University Press.

Ott, Dennis. 2014. An Ellipsis Approach to Contrastive Left-Dislocation. Linguistic Inquiry 45.269-303.

Richards, Norvin. 2016. Contiguity Theory Cambridge, MA: MIT Press.

Roberts, Ian. 2016. Some remarks on parameter hierarchies. Rethinking Parameters, ed. by L. Eguren, O. Fernández-Soriano & A. Mendikoetxea, 170-99. Oxford: Oxford University Press.

Rosen, Sara Thomas. 1989. Two Types of Noun Incorporation: A Lexical Analysis. Language 65.294-317.

Salzmann, Martin. 2018. Revisiting the NP vs. DP debate (ed.) U.o. Leipzig.

Travis, Lisa de Mena. 1984. Parameters and Effects of Word Order Variation. Cambridge, MA: Massachussets Institute of Techonology Ph.D. Dissertation.

Wiltschko, Martina. 2008. The syntax of non-inflectional plural marking. Natural Language & Linguistic Theory 26.639-94.

—. 2014. The Universal Structure of Categories: Towards a Formal Typology Cambridge: Cambridge University Press.