DISCONTINUOUS QUANTIFIERS IN MICHIF[*]

Daiho Kitaoka and Kathleen Strader
University of Ottawa

1.   Introduction

In Michif (Algonquian), quantifiers modify their associate nominals either DP-internally (1a) or remotely (1b)[1&2].

(1)   a.   <u>Continuous Object DP</u>
Li   pwesonyeen kee-kawschitin-ayw **mischayt lee   pwesoon**.
DET fisherman   PST-catch.TA-3?3´   much   DET fish
'The fisherman caught many fish.' (NF 2015)

   b.   <u>Discontinuous Object DP</u>
Li   pwesonyeen **mischayt** kee-kawschitin-ayw **lee   pwesoon**.
DET fisherman   much   PST-catch.TA-3?3´   DET fish
'The fisherman caught many fish.' (Laverdure and Allard, 1983, 96)

We refer to quantifiers that remotely modify their associate nominal as discontinuous quantifiers (e.g., *mischayt* in (1b). Similar phenomena are observed in many other Algonquian languages, and attract much attention in past literature (Dahlstrom, 1987; Reinholtz, 1995; Bruening and Lin, 2001; Lochbihler, 2009; Bliss, 2014; Johnson and Rosen, 2015). In this paper, we submit novel data that previous studies fail to capture, and instead propose that Local Instability (LI; Ott 2011, 2012, 2015) and focus movement, applying Lochbihler (2009), explain the mechanism and properties of the phenomenon in Michif. This analysis aims to show that LI is a mechanism that permits solely the quantifiers to be discontinuous.

This paper is organized as follows. After giving a brief overview of the Michif language, and summaries of past studies (Section 2), we introduce the theory of LI (Section 3). We then illustrate the properties and the distribution of discontinuous DPs, and how LI works to account for them (Section 4). We also argue in that section that the movement

caused by LI discussed in the previous section is focus movement, showing that the discontinuous quantifiers are assigned a focus interpretation, and that the landing site for these quantifiers is a focus position. Section 5 closes the paper, referring to further issues to be explored.

2. Background

2.1 Michif

Michif is a central Algonquian language spoken by the M□tis people in the North American central prairies including Alberta, Saskatchewan, Manitoba, and North Dakota. It is a mixed language derived from Plains Cree (Algonquian) verb phrases and French noun phrases (Bakker, 1997; Rosen, 2007; Strader, 2014). From Plains Cree, Michif inherits verbal morphosyntax (inflections) which permits null pronouns and non-configurational word order. Michif shows properties of non-configurational languages proposed by Hale (1983) and discussed for Mohawk (Iroquoian) by Baker (1996): free word order, as in (2a) and (2b)[3], null anaphora (2c), and discontinuity.

(2) a. Norman en   oraanzh kii-mow-eew.
         Norman INDEF.F orange   PST-eat.TA-3→3'
         'Norman ate an orange.' (NF 2015)   (SOV)

     b. Kii-mow-eew   Norman en   oraanzh.
         PST-eat.TA-3→3' Norman INDEF.F orange
         'Norman ate an orange.'   (VSO)

     c. Kii-kaashchitinee-wak.
         PST-caught.TA-3P→3'
         'They caught it (an animal).' (NF 2015)   (Null pronouns)

The majority of nominal material originates from French, including nouns, articles, numbers, possessive determiners and adjectives. On the other hand, demonstratives are derived entirely from Plains Cree. Quantifiers, which are inherited from both parent languages as in *kahkiyuw* 'all' (from Plains Cree) and *tout* 'all' (from French), occur in discontinuous expressions, whereas articles (*lii, li, la*) and possibly demonstratives (such as *awa* 'that', *anakik* 'those', etc.) do not.

2.2 Previous accounts of discontinuous DPs

We briefly summarize the previous studies regarding discontinuous phenomena in Algonquian languages, which include Pronominal Argument Hypothesis (PAH) (Jelinek, 1984), Focus movement (Dahlstrom, 1987; Reinholtz, 1995; Lochbihler, 2009; Johnson and Rosen,

---

[3]The non-configurationality of Algonquian languages is not fully accepted. See footnote 8 for details.

2015), and Split DP hypothesis (Bliss, 2012). Jelinek (1984) claims that discontinuous nominal expressions are adjuncts which are licensed by a pronominal argument on the verb. The pronominal argument is referentially linked to adjunct nominals outside the verbal complex. Baker (1991) applies PAH to discontinuous phenomena in Mohawk, an Iroquoian language. The PAH assumes that the pronominal argument is referentially linked to the two elements of the discontinuous expressions (i.e., discontinuous quantifiers/demonstratives, and their associate nominals) outside the verbal complex, each of which is considered an independent adjunct.

Generally, a focus movement analysis involves the movement of a demonstrative or quantifier into the specifier position of a Focus Phrase. The remaining noun phrase stays in its original position. Johnson and Rosen (2015) build on the Focus movement analysis with the addition of left branch extraction (LBE; Bošković 2005). In Johnson and Rosen (2015), the moved elements (determiners) target the specifier of either the external topic or focus positions. The specifier of the internal topic retains the preverbal DP argument and the external topic is characterized as either being a position for a left-dislocated element or a possible non-argument. Topic and Focus layers can be reordered depending on the language. The external topic does not need to be an argument of the verb.

Finally, the split DP analysis refuses the movement analysis, and considers discontinuous quantifiers are base-generated at the surface position (Bliss, 2012). The split-DP analysis argues that NPs merge DP-internally within vP, and modifiers merge in the specifiers of functional heads outside the vP. The discontinuous constituents are all licensed within the clause and must be referentially linked with the verb.

3. Local instability

In this section, we introduce Ott's (2011; 2012; 2015) analysis of Local Instability (LI) as theoretical background of our analysis in the present paper.[4] Ott observes that Floating Quantifiers (FQs) in German are phrasal and autonomous against their associate DP. In (3), *alle vier* 'all four' is in a complex form (i.e., phrasal), and the sentence does not have the DP-internal counterpart.[5]

(3) Die Bücher hat er alle vier gelesen
     the books has he all four read
     (*alle vier die B□cher) (Ott, 2015, 192)

Building upon these observations, Ott proposes the base structure as in (4).

[4]Ott (2011; 2012; 2015) mainly discusses Split Topic in German, and applies the analysis to Quantifier Float. To illustrate similarities and systematic differences between German and Michif, we use examples of Quantifier Float.

[5]Regarding the phrasehood of discontinuous elements, Ott (2015) more convincingly shows it with Split Topic.

(4)
$$\widehat{\text{DP} \quad \text{QP}}$$

Ott also claims that FQs undergo movement (to be precise, A-bar movement) by showing that the fronted DP should have A-bar dependency to the VP-internal counterparts. Ott (2012, 2015) further argues that if two autonomous nominal expressions merge as in {XP,YP}, this unity is unstable because it is unlabelled. This local instability forces one of the expressions to move out so that it is labelled, as in [$_{YP}$ t$_{XP}$ YP] (similar observations and analysis made of Georgian in Fuchs (2007)). In (5a), the combination of two autonomous expressions, {DP,QP}, is unstable, and not labelled. Moving one of them (DP in 5b) out of this unstable unit enables it to be properly labelled as QP.

(5)   Quantifier Float and Local Instability in German
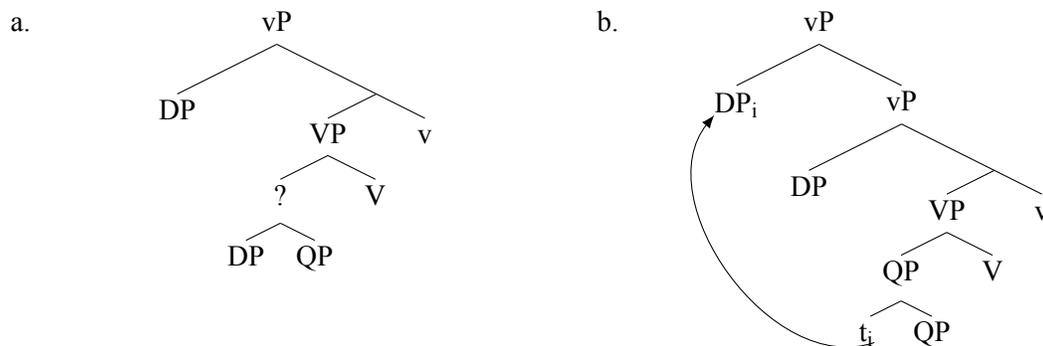
In ensuing sections, we apply the theory of LI to discontinuous expressions in Michif.[6] We show that discontinuous quantifiers in Michif are autonomous nominal phrases (QP) which form an unstable (i.e., unlabelled) unit with the associate DP. As described above, such unstable unit forces one of the elements to move out so that the mother node is duly labelled.

4.   Analyses

We propose, applying LI, that discontinuous quantifiers are base-generated as a sister to their associate DP as in (6a), and undergo focus movement as in (6b) and (7).

(6)   LI in Michif Discontinuous expressions

---

[6]Michif and German are different in that QP moves in Michif, while the associate DP moves in German.

a.   ?
      QP DP

b.   DP
      t_{QP} DP

(7) Focus movement in Michif (based on Johnson and Rosen (2015))

FocusP
QP_i TP
      vP
    DP   v   DP
        t_i DP
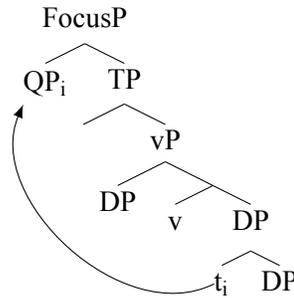
In this section, we discuss the properties of discontinuous quantifiers in Michif and demonstrate how LI explains them. We also demonstrate that the movement caused by the instability of {QP, DP} is focus-driven movement.

4.1   Discontinuous quantifiers are moved but not extracted

Discontinuous quantifiers are not base-generated at the surface position (at the left edge of the verbal complex), which would predict that they are extracted from their associate DP. We show, however, that these quantifiers are not extracted from their associate DP, either. First, we argue against base-generation, by illustrating that discontinuous quantifiers are derived through movement. The split DP analysis claims that discontinuous quantifiers are base-generated in their surface position (Bliss (2012) for Blackfoot). This analysis does not explain the scope fact illustrated in (8); Discontinuous quantifiers scope below negation. This means that discontinuous quantifiers are base-generated below Neg, presumably in the verbal domain.

(8)   **Mawchi** nama-tay-wuk **lee tramp**, lee hobos.
      many   NEG-be.AI-3P   DET tramp,   DET hobo
      'There aren't very many old time tramps.' (Laverdure and Allard, 1983, 338)

Instead, our present analysis is building upon the movement analysis. However, we argue, contra previous movement analysis, that discontinuous quantifiers are not extracted from the associate DP. Movement analysis of discontinuous DP phenomena in other Algonquian languages posits that discontinuous quantifiers are extracted out of the associate DP (Johnson and Rosen, 2015). Examine (9), if the quantifier is extracted out of its associate DP in (9b), it should go beyond the demonstrative.

(9) a. DP-internal: DEM Q D N

    Anikik lii paysheur **anihi kahkiiyow lii pwasoon** kii-kaatchitihn-aywak.

    DEM DET fishermen DEM all DET fish PST-catch.TA-3.P→3'

    'Those fisherman caught all those fish.' (NF 2015)

  b. Discontinuous quantifiers: QP — DEM D N

    Anikik lii paysheur **kahkiiyow** kii-kaatchitihn-aywak **anihi lii**

    DEM DET fishermen all PST-catch.TA-3.P→3' DEM DET

    pwasoon.

    fish

    'Those fisherman caught all those fish.'(NF 2015)

This movement is not straightforward for various analyses of extraction from DPs based on Phase Theory or Locality Principle (e.g. Svenonius (2004); Bošković (2005)). For instance, Bo☐kovi?'s Left Branch Extraction (LBE) assumes that DP is a phase. LBE permits the extraction of modifiers (adjectives) to the left edge, but is not possible with deeply embedded modifiers (e.g. extracting a modifier from an N complement) in Slavic languages or English (Bošković, 2005).

    On the basis of this data, we argue that discontinuous quantifiers are moved, but are not extracted. Therefore we propose an alternative account for their mechanism, namely, LI.

4.2 Discontinuous quantifiers are autonomous

Discontinuous quantifiers are more than a quantifier head, but phrasal, as expected by LI. LI posits that two expressions in discontinuous phenomena are autonomous from each other from the initial stage of phrasal derivation. Discontinuous quantifiers in Michif have complex internal syntactic structures. In (10), *aen pchi braen nawat* 'least' is a phrase that consists of two combined elements: *aen pchi braen* 'little' and *nawat*, a comparative maker.

(10) **Aen pchi braen nawat** gee-miyikaw-in **larzhawn** niya.

    little by.comparison 1.PST-give.TA-1?NON3 DET.money 1.PN

    'I got the least money.' (Laverdure and Allard, 1983, 162)

Note, *aen pchi braen nawat* 'little by comparison' is not a compound, although *aen pchi braen* 'little' is one lexical item. As illustrated in (11), *nawat* can appear in any order with respect to its quantifier, can occur without a quantifier, and can be separated from its quantifier.

(11) a. **Nawut** aen pchi braen shoohki-taypway.

    by.comparison little.bit intensely-yell.IMP.AI.2

    'Holler a little louder.' (Laverdure and Allard, 1983, 137)

b. **Nawut** <u>lee</u> <u>wawpisht-ikwawn</u> la fon ayaw-wuk.
by.comparison Det.p white-head Det.f fun have.AI-3p
'Blonds have more fun.' (Laverdure and Allard, 1983, 37)

c. **Apisheesh** gee-miyikawi-n **nawat** larhzawn.
little 1.PST-receive.TI-1 comparative money
'I got the least money.' (VD & HP 2014)

Thus, discontinuous quantifiers are phrasal and autonomous against their associate DP, as in (6a), wherein the node, {QP, DP}, is not properly labelled. We follow LI in that this instability causes movement of the QP, as in (6b).

4.3 The movement of QP is focus-driven

In the previous sections, we saw the evidence of movement and its motivation (i.e., LI). This section illustrates that Focus movement explains position, distribution, interpretation, and restriction of discontinuous quantifiers. In particular, we show that the quantifier lands at the left-edge of the verbal complex, which previously has been claimed to be focus position, and that the discontinuous quantifier is appointed a focus interpretation. We account for the strong tendency that discontinuous quantifiers are object-oriented regardless of structural hierarchy or Person Hierarchy ranking in contrast to the subject.[7]
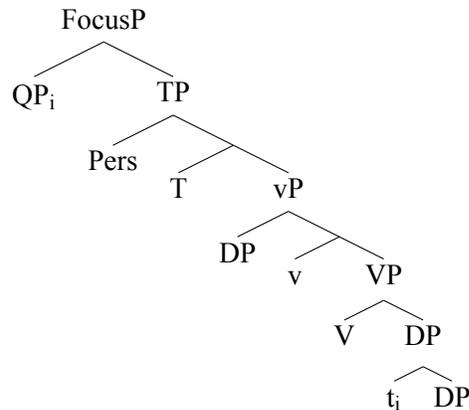
First, discontinuous quantifiers are assigned focus interpretation. In (12a), the quantifier *mischet* 'many' highlights the contrast with the speaker's expectation of the catch. *Mawchi* 'many' highlights a past state where there were more tramps and hobos.

(12) a. Namakaykuy ni-tayhtum-nan maaka **mischet** ni-kaaschintin-aanak
NEG 1-thought.AI-1.P but many 1.PST-catch.TA-1P→3P

   lii poison.
   DET fish

'We wouldn't have thought but we caught a lot of fish.' (Unexpected event) (NF 2015)

b. **Mawchi** nama-tay-wuk **lee tramp**, lee hobos.
many NEG-be.AI-3P DET tramp, DET hobo

'There aren't very many old time tramps.' (Laverdure and Allard, 1983, 338)

Second, discontinuous quantifiers are at focus position. Discontinuous quantifiers precede tense markers and preverbal person agreement, as illustrated in (1a) and (12a). The simplified structure for (12a) is in (13).

---

[7]Person Hierarchy indexes arguments on the verb. The ordering of arguments for the Algonquian verb is 2>1>3.

(13)

```
                          FocusP
                         /      \
                      QPᵢ         TP
                              /        \
                          Pers          
                                /    \
                              T        vP
                                     /    \
                                   DP      
                                        /    \
                                       v      VP
                                            /    \
                                           V      DP
                                                /    \
                                              tᵢ      DP
```

Discontinuous quantifiers always surface prenominally, with the remaining nominal elements following the verb maintaining their linear order, see (14a). The quantifier generally appears between the overt subject nominal and the verb. Adjunct DPs cannot intervene between the discontinuous quantifier and verbal predicate, as illustrated (14b). These quantifiers precede tense and subject agreement, and follow sentential negation (14c)

(14) a.   Lee   pstit   vil   alawntour   **mishtahi** oushih-aywuk   **larzhawn**
           DET.P little.P village surrounding much   make.TA-3P?3´   DET=money

           li   risarv   ouschi.
           DET.M reservation loc.from

           'The outlying towns make a lot of money from the reservation.' (Laverdure and Allard, 1983, 206)

      b.   * lee pstit vil alawntour **mishtahi** <u>li risarv ouschi</u> oushih-aywuk **larzhawn**
           (VD and HP 2014)

      c.   Kawya **mishtahi** ashtaw   **li**   **sel** .
           NEG   much   put.TI-IMP.2 DET.M   salt

           'Don't put in much salt.' (Laverdure and Allard, 1983, 185)

Thus, discontinuous quantifiers reside at the left edge of the verbal complex. Following the previous analysis, we claim that this is a focus position (Dahlstrom (1987) for Meskwakie, Reinholtz (1995) for Swampy Cree and Lochbihler (2009) for Ojibwe)

Third, the focus interpretation of discontinuous quantifiers and their distribution are compatible with their object-orientedness of them. Word order in Michif is not as flexible as some Algonquian languages.[8] For instance, contrary to other Algonquian, nominal internal word order in Michif is fairly fixed, as discussed above. Subjects appear in pre- and post-verbal positions with no change in meaning (1a) and (9a), while objects prefer a post verbal

---

[8]Non-configurationality of Algonquian is doubted, however. For instance, word order is claimed to be conditioned by some sort of semantic or pragmatic properties (focus, topic) (Junker (2004) for East Cree, Muehlbauer (2003) for Plains Cree). More work needs to be done to formalize syntax and semantics of word order in Michif.

position. Therefore, we postulate that only the quantifier may move in order to indicate focus.[9]

5.   Conclusion & future research

We illustrated that discontinuous quantifiers are in fact phrasal and base-generated as a sister to their associate DP, and that they undergo movement. We argued that the local instability of the sequence {QP, DP} causes QP to move out of this unstable unit. We also showed that this movement is focus-driven. The analysis which includes LI and focus movement gives an account for the syntactic and semantic properties of discontinuous quantifiers.

To further support our analysis, we need to explore discontinuity in secondary objects, see (15), or ditransitive objects, in conjunct order (although conjunct order is not used to the same frequency in Michif as with other Algonquian), and interaction with person indexing and theme.

(15)   Li   zheuzh **see   lisawns** kee-mashkam-ayw **Zhorzh-a**   .
       DET.M Judge   his.M licence PST-seize.TA-3→-3′ George-OBV

       'The judge revoked George's license.' (Laverdure and Allard, 1983, 268)

These would provide clues into derivations and structures of a sentence and agreement systems more in-depth. Our analysis also has implications for the discourse-syntax interface: regarding the ability of discontinuous expressions to cope with when and how to encode pragmatic factors.

References

Baker, Mark C. 1991. On some subject/object non-asymmetries in Mohawk. *Natural Language and Linguistic Theory* 9(4): 537–576.

Baker, Mark C. 1996. *The polysynthesis parameter*. Oxford: Oxford University Press.

Bakker, Peter. 1997. *A language of our own: the genesis of Michif, the mixed Cree-French language of the Canadian Métis*. New York, NY: Oxford University Press.

Bliss, Heather. 2012. A split DP analysis of Blackfoot nominal expressions. In *Proceedings of the 2012 annual conference of the Canadian Linguistic Association*, ed. Paula Cazaj. Toronto: University of Toronto Press, 1–15.

Bliss, Heather. 2014. Assigning reference in clausal nominalizations. In *Cross-linguistic investigations of nominalization patterns*, ed. Ileana Paul. Amerstdam: John Benjamins, 85–117.

Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59(1): 1–45.

Bruening, Benjamin, and Vivian Lin. 2001. Discontinuous QP and LF interference effects in Passamaquoddy. In *UMOP 25: The Proceedings of SULA (the semantics of under-represented languages in the Americas)*. eds. Kim, Ji-Yung, and Adam Werle, 20–28. Amherst, MA : University of Massachusetts.

_____

[9]A similar phenomenon happens to Blackfoot discontinuous demonstratives (Bliss, 2012).

Dahlstrom, Amy. 1987. Discontinuous constituents in Fox. In *Native American languages and grammatical typology: Papers from a conference at the University of Chicago, April 22, 1987*, ed. Paul D. Kroeber and Robert E. Moore. Bloomington: Indiana University Linguistics Club, 53–73.

Fuchs, Zuzanna. 2007. In *Movement vs base generation in Georgian split DPs*. Paper presented at the 91 meeting of the LSA. Austin, TX. January 5, 2017.

Hale, Kenneth L. 1983. Warlpiri and the grammar of non-configurational languages. *Natural Language and Linguistic Theory* 1(1): 5–47.

Jelinek, Eloise. 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2(1): 39–76.

Johnson, Meredith and Bryan Rosen. 2015. The syntax of discontinuous noun phrases in Algonquian languages: left branch extraction and focus movement. In *Papers of the 43rd Algonquian Conference*. Albany, New York: SUNY Press, 135–150.

Junker, Marie-Odile. 2004. Focus, obviation, and word order in East Cree. *Lingua* 114(3): 345–365.

Laverdure, Patline, and Ida Rose Allard. 1983. *The Michif dictionary: Turtle Mountain Chippewa Cree*. Winnipeg, MB: Pemmican Publications.

Lochbihler, Bethany. 2009. Discontinuous DP constructions. In *Proceedings of the 2009 annual conference of the Canadian Linguistic Association*, ed. Frédéric Mailhot. Toronto: University of Toronto Press, 1–13.

Muehlbauer, Jeffrey. 2003. Word-order and the interpretation of nominals in Plains Cree. Unpublished manuscript.

Ott, Dennis. 2011. *Local instability: The syntax of split topics*. phdthesis, Harvard University, Cambridge, MA.

Ott, Dennis. 2012. *Local instability, split topicaliztopic and quantifier float in German*. Boston: Mouton de Gruyter.

Ott, Dennis. 2015. Symmetric merge and local instability: evidence from split topics. *Syntax* 18(2): 157–200.

Reinholtz, Charlotte. 1995. Discontinuous constituents in Swampy Cree. In *Papers of the 26th Algonquian conference*, ed. David H Pentland. Winnipeg, MB: University of Manitoba, 394–412.

Rosen, Nicole. 2007. *Domains in Michif phonology*. phdthesis, University of Toronto.

Strader, Kathleen. 2014. *Michif determiner phrases*. mathesis, University of Manitoba.

Svenonius, Peter. 2004. On the edge. In *Peripheries: Syntactic edges and their effects*, ed. David Adger, Cécile de Cat, and George Tsoulas. Dordrecht: Kluwer, 259–287.