First Conjunct Agreement is an Illusion[*]

Eman Al Khalaf, *University of Jordan* (e.alkhalaf@ju.edu.jo)

Abstract

Natural languages exhibit two patterns of conjunct agreement (CA). Some languages show first conjunct agreement (FCA; e.g., Welsh). Other languages show *last* as well as first conjunct agreement (closest conjunct agreement (CCA); e.g., Hindi-Urdu). I investigate three FCA-languages (Arabic, Biblical Hebrew, and Welsh), and argue that FCA is an illusion: it is not the first conjunct that values agreement. Alternatively, I propose that a null *pro* values its unvalued features by agreeing with the linearly closest NP before it Agrees with the verb in a left to right derivational model, resulting in what appears to be illusive conjunct agreement. The proposal leads to the conclusion that FCA as in Welsh is actually not conjunct agreement; there is real conjunct agreement, but it is always *closest* conjunct agreement.

Keywords: Coordination, Conjunct Agreement, Linear Order, Little *Pro*

1 Introduction

It has long been known that the initial conjunct may value agreement in many of the languages that allow VSO order (McCloskey 1986; Muhammad 1990; Aoun *et al.* 1994; Munn 1999; Doron 2000; Citko 2004, Soltan 2007; Borsley 2009; Larson 2013; Murphy and Puškar (*to appear*), among many others). The phenomenon has since been referred to as first conjunct agreement (FCA). The example below is representative:[1]

(1) sa-taktubu   almudi:ratu   wa musaʕidu:=hunna taqri:ran
     FUT-write.3F.S the.manager.F.P and assistant.M.P=3F.P a.report

---

[1] Conjunct agreement is not restricted to subject-verb agreement. It also occurs within phrases. Phrasal conjunct agreement is beyond the scope of this squib.

'The managers (feminine) and their assistants will write a report.' (Arabic[2])

More recently, Marušič *et al.* (2007), Benmamoun *et al.* (2009), Bošković (2009), Bhatt and Walkow (2013), Marušič *et al.* (2015), Čordalija *et al.* (2016), Willer-Gold *et al.* (2016) and others have shown that the *final* as well as the initial conjunct may value agreement if it is the closest conjunct to the agreeing element, which has been dubbed closest conjunct agreement (Benmamoun *et al.* 2009). In (2), the coordinate phrase is sandwiched between two agreeing elements, and simultaneous first and last conjunct agreement apply (Bhatt and Walkow 2013, 962, 16a):

(2) Rina-ne   gaa-yii   ek ghazal   aur ek nazam   thii
     Rina-ERG sing-PFV.F a   ghazal.F and a   nazam.F be.PST.F.SG
     'Rina has sug a ghazal and a nazam.'   (Hindi-Urdu)

I will refer to the languages that pattern with Arabic as FCA-languages and the languages that pattern with Hindi-Urdu as CCA-languages. A major difference between FCA- and CCA-languages is that the former, in contrast with the latter, does not allow last conjunct agreement when the coordinate phrase precedes the agreeing element, and shows resolved agreement instead. This is all puzzling if the real condition on conjunct agreement is linear proximity. This squib attempts to solve this puzzle by looking more closely at three FCA-languages: Arabic, Biblical Hebrew, and Welsh. It argues that conjunct agreement in these languages, and presumably in languages that pattern with them, is not genuine conjunct agreement, and consequently requires a special account. More specifically, building on previous accounts (Muhammad 1990; Den Dikken 2001; Citko 2004; Holmstedt 2009), it will be argued that the agreement seen is in fact a regular subject-verb agreement with a null *pro*, which in turn agrees with the closest NP in a left to right derivational model (Phillips 1996, 2003; Bruening 2013). Contra previous accounts which use linear order as a proxy of hierarchical relations (Bošković 2009; Murphy and Puškar (*to appear*), e.g.), the analysis to be advanced depends solely on linear order to derive the pattern of agreement in FCA languages.

2   Puzzling Facts about FCA

In this section, I will show that conjunct agreement in the three FCA-languages under investigation is not genuine conjunct agreement and requires an analysis that departs away from the assumption that the initial conjunct is the trigger of agreement.

---

[2]Unless indicated otherwise, the variety of Arabic under investigation is Modern Standard Arabic. The following letters/symbols will be used in the Arabic examples: ħ = voiceless pharyngeal fricative; kh = voiceless uvular fricative; S= voiceless alveolar fricative; ʕ=voiced pharyngeal fricative; TH= voiced inter-dental fricative; T= alveo-palatal stop; gh = voiced uvular fricative; q = voiceless uvular stop; ʔ = glottal stop. All the cited examples have been adapted to this system for convenience.

The first observation about the agreement in these languages is that it is not specific to coordination. A similar pattern of partial agreement also occurs when the subject is non-coordinate, as shown below:[3]

(3) a. Gwelodd/*Gwelon   y bachgen/bechgyn ddraig.
         see.PAST.3SG/*see.PAST.3PL the boy/boys   dragon
         'The boy/boys saw a dragon.' (Borsley 2009, 227, (5); adapted)

     b. Gwelodd/*Gwelon   y bachgen/bechgyn a   Megan ddraig.
         see.PAST.3SG/*see.PAST.3PL the boy/boys   and Megan dragon
         'The boys and Megan saw a dragon.'   (Welsh)

(4) a. zar-at/*zur-na   aT-Talibat-u   wa T-Tullab-u   dar-a
         visited-3F.SG/*visited-3F.PL the-students.F-NOM and the-students.M house-ACC
         al-aʔaytam-i
         the-orphans-GEN
         'The (female) students and the (male) students visited the orphanage.'

     b. zar-at/*zur-na   aT-Talibat-u   dar-a   al-aʔaytam-i
         visited-3F.SG/*visited-3F.PL the-students.F-NOM house-ACC the-orphans-GEN
         'The (female) students visited the orphanage.'   (Arabic)

This clearly indicates that what we see here is not conjunct agreement; it is rather partial agreement that requires a more general account.

Furthermore, the agreement in these languages seems to be prevalued for number. Regardless of the number value of the initial conjunct, agreement must be singular. Again, this pattern is also seen with non-coordinates (Willis 2012, (7), adapted; Al Khalaf 2015, (301a)):[4]

(5) Gwelodd/*gwelson   y cathod y llygod.
     see.PAST.3SG/see.past.3MPL the cats   the mice
     The cats saw the mice.   (Welsh)

(6) qadam-at/*qadam-na   at-tilmiið-at   wa at-talamiið   al-imtihan
     take-3F.SG/*take-3F.-PL the-student.F.PL and the-student-M.PL the-test
     'The students (females) and the the students (males) took the test.'   (Arabic)

---

[3]An anonymous reviewer suggests that a connection between conjunct agreement and partial agreement is unnecessary because the latter could be semantically triggered with a member of the plurality denoted by the subject. While this could be the case in languages like English (1) where partial agreement is optional, I don't think it is the case in Welsh-type languages where partial agreement is obligatory.

(1) There is/are bugs in the basement.

[4]I was unable to locate Biblical Hebrew examples in which a postverbal subject or the initial conjunct of a coordinate postverbal subject is plural. In absence of counter evidence, I assume that Biblical Hebrew patterns with Arabic and Welsh.

However, when the postverbal subject or the initial conjunct in a postverbal coordinate subject is a pronoun, agreement must be full (in all phi features) (Holmstedt 2009, 37, (21b,c); Soltan 2006, (18b), adapted):

(7) Gwelon/*Gwelodd   nhw ddraig.
    see.PAST.3PL/*see.PAST.3SG they dragon
    'They saw a dragon. (**?**, 277, (4); adapted)   (Welsh)

(8) və-niʃmad-ti: ʔăni: u:-be:t-i:
    and-shall.be.destroyed-1CS I   and-house-my
    'and (I) shall be destroyed, I and my household'   (Biblical Hebrew)

(9) žiʔ-nna   hunna   wa ʔabaaʔ-u-hunna
    came-3PL.FEM they.FEM and fathers-NOM-their.FEM
    'They (females) and their fathers came.'   (Arabic)

It is unclear how the accounts that assume agreement between the initial conjunct and the verb will derive the partiality, and how they will explain the fact that pronominal conjuncts enforce full agreement in cases like (7), let alone the partial agreement with non-coordinates.

Moreover, FCA-languages show mixed agreement when the coordinate phrase appears between two agreeing elements: the element that precedes the coordinate phrase shows FCA, while the one that follows it shows resolved agreement (agreement with the whole coordinate phrase; McCloskey 1986; Munn 1999; Lorimor 2007; and others) as in (10).

(10) kan-at   aT-Talibat-u wa aT-Tullabu   yadru-sun   fi-l-maktaba-ti
     be-3F.SG the-students.F and the-students.M study-3M.PL
     'The female students and the male students were studying at the library.'   (Arabic)

We have seen that the same context triggers simultaneous first and last conjunct agreement in CCA-languages as shown in (2). This fact is puzzling if the condition on conjunct agreement is linear proximity, as shown by Marušič *et al.* (2007), Benmamoun *et al.* (2009), Bošković (2009) Bhatt and Walkow (2013);Marušič *et al.* (2015), Čordalija *et al.* 2016.

The peculiarities presented above pose a challenge to existing accounts. The analyses that assume hierarchical prominence of the initial conjunct (Johannessen 1998; Munn 1999, among others), and those that posit late operations (Soltan 2007; Larson 2013) cannot explain the partial nature of conjunct agreement. Also, the accounts that have been proposed to capture CCA in which agreement is split between narrow syntax and the PF are tailored for the languages that exhibit LCA and have little to say about languages like Welsh (e.g., Bhatt and Walkow 2013; Aljović and Begović 2016). Below, I will propose a new analysis that explains the pattern of agreement in FCA-languages.

3 Null *Pro* and Left to Right Derivation

I argue that FCA is an illusion; the agreement is not a result of agreement between a conjunct and an agreeing element.[5] It is rather a subject-verb agreement with a null pro. Before I present my proposal, it is necessary to spell out some assumptions. First, following Phillips (1996, 2003), Bruening (2013), and others, I assume that structures are constructed from left to right. Second, building on Muhammad (1990), Den Dikken (2001), Citko (2004), Holmstedt (2009), I assume that a null pro occupies spec-TP of the sentence. I stipulate that *Pro* is prevalued as singular, but unvalued for person and gender.[6] I further assume that *pro* may not enter in an agreement relation without valuing its features first.[7]

Turning to the analysis, as illustrated in (11, left) for the Arabic example in (4b), the derivation starts by building the structure, going from left to right, by merging *pro*. I assume that the subject is VP-internal (Sportiche 1988; Koopman and Sportiche 1991; McCloskey 1997, among others), V moves to T (Fassi Fehri 1993; Aoun *et al.* 1994; Benmamoun 2000, and others), and the thematic subject is licensed by a functional head F. Upon the merger of the thematic subject, *aT-Talibat-u* 'the (female) students', *pro* checks its person and gender features by agreeing with it. *Pro* may then agree with the verb, giving rise to the partial agreement observed. The same applies when the subject is a coordinate, as illustrated in (11, right) for (4a); *pro* agrees with the first NP merged into the derivation, which is the initial conjunct in this case.[8]
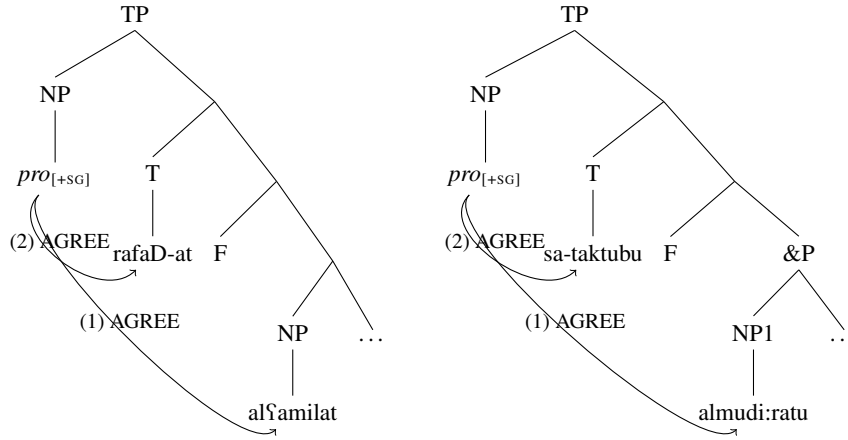
(11)

---

[5]Effects of binding condition A provide evidence for *pro* (effects of binding condition B and C exist as well):

(1)   a.   *pro$_i$* ʔjbara nafsahu$_i$ ʕala aT-Taʕami raghma maraDih
         pro$_i$ forced himselfi on   the-food   despite his.sickness
         'He$_i$ forced himself$_i$ to eat despite his$_i$ sickness.'

    b.   *pro$_i$* qal   ʔanna Salma ʔjbar=at nafsahu$_i$ ʕala aT-Taʕami raghma maraDih
         pro$_i$ said that   Salma forced   himself$_i$ on   the-food   despite his.sickness
         '*He$_i$ said that Salma forced himself$_i$ to eat despite his$_i$ sickness.'   (Arabic)

[6]The reason why I assume that *pro* is prevalued as SINGULAR, not PLURAL, for instance, is that singular is generally assumed to be the default number in many languages. As for why *pro* is prevalued for NUMBER but not PERSON and GENDER, NUMBER is semantically less contentful than PERSON and GENDER, so adding a NUMBER feature to *pro* will not change its semantic value drastically.

[7]Note that it is more intuitive to assume a null subject here than to assume that the verbs themselves are defective because it would be hard to explain why the verbs should be defective only in this context (VSO order).

[8]The analysis does not require a particular analysis of coordinate structure, but I adopt the structure proposed by Johannessen (1998) (also Kayne 1994, Zhang 2010, and others) in which the coordinator projects its own phrase.

TP
├── NP
│   └── *pro*[+SG]
├── T
│   └── rafaD-at
│   └── (2) AGREE
│   └── (1) AGREE
├── F
│   └── NP
│   └── alʕamilat
└── …

TP
├── NP
│   └── *pro*[+SG]
├── T
│   └── sa-taktubu
│   └── (2) AGREE
│   └── (1) AGREE
├── F
│   └── &P
│   └── NP1
│   └── almudi:ratu
└── …

As can be seen, the partial agreement in VSO order is accounted for by positing a null pronoun in a left to right derivational syntax. The linear effect is seen when *pro* agrees with the linearly closest NP, which happens to be the initial conjunct when the thematic subject is a coordinate phrase. Partial agreement with coordinate subject is, then, not conjunct agreement; it is just subject-verb agreement, and it is a totally different species from the conjunct agreement seen in CCA-languages like Bosnian/Croatian/Serbian or Hindi-Urdu.

With regard to the full agreement with pronouns, it should be noted that, at least in Arabic, in this context the pronouns are optional, that is when partial agreement applies the pronouns can be left out. This is true of coordinate and non-coordinate subjects:

(12)   a.   qaddam-u   (hum) aS-Sadi:qa al-jadi:d li-al-ʕaʔilah
             introduced-3MP they   the-friends the-new to-the-family
             'They introduced the new friend to (their) family.'

       b.   waSal-u   (hum) wa ʔabnaʔi=him ʔila makani alħafl
             arrive-3MP (they) and sons=3MP   to place   ceremony
             'They and their sons arrived at the ceremony's location.'   (Arabic)

I suggest that the full agreement seen in these contexts is a result of subject verb agreement with a fully-valued null *pro*. I further hypothesize that the pronouns are clitics that carry the agreement features of *pro*.
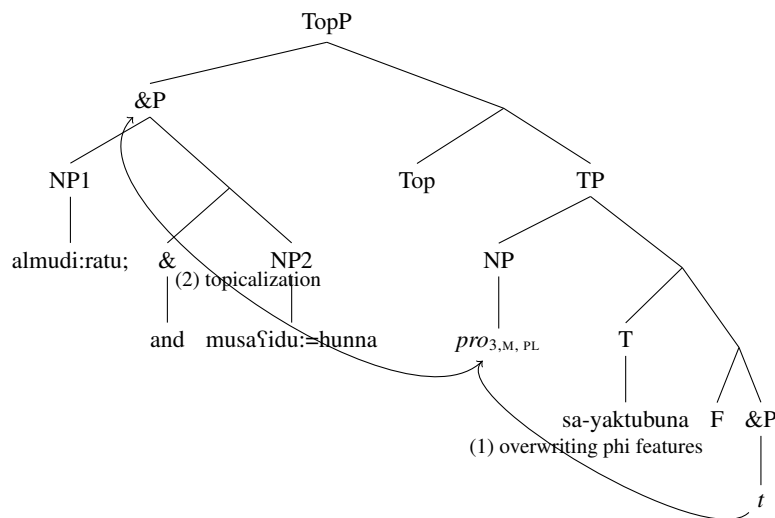
Regarding agreement in SVO order, and focusing on the Arabic case, I assume that in SVO, the thematic subject moves from spec-VP (where it gets licensed by the functional head F) to a position higher than spec-TP (a spec-TopicP, for instance).[9] What occupies spec-TP is, then, a null *pro*. I hypothesize that, since

---

[9] This reflects the difference in information structure between SVO and VSO orders reported in much literature (e.g., Aoun *et al.* 2010) and reported by many of the native speakers of Arabic I have consulted.

pro is null, the thematic subject may stop at spec-TP before it moves again to its landing site. This causes overwriting of the features of *pro*, copying all the features of the thematic subjects to *pro*, which explains why in this word order agreement must be full/resolved, as illustrated in (14) for (13).
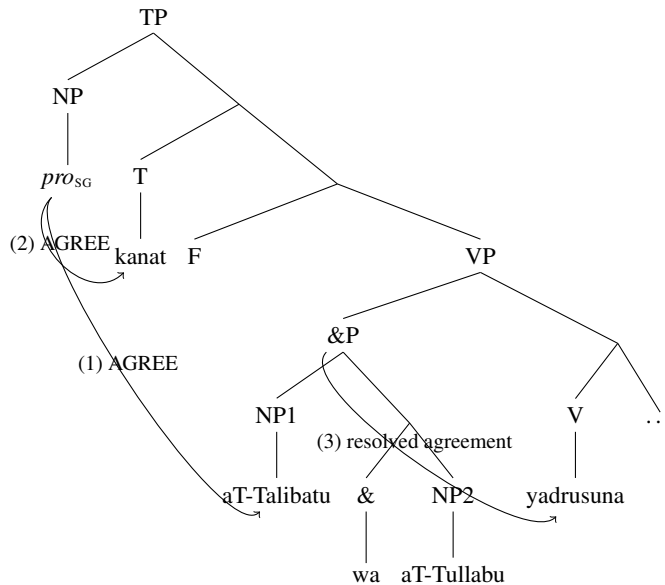
(13) almudi:ratu   wa musaʕidu:=hunna   sa-yaktubuna   taqri:ran
the.manager.F.PL and assistant.M.PL=3F.PL FUT-write.3M.PL a.report
'The managers (feminine) and their assistants will write a report.'   (Arabic)

(14)

Furthermore, the analysis advanced here offers a simple explanation of the pattern of mixed agreement seen in examples like (10) above. As can be seen, *pro* agrees with the linearly closest NP, *aT-Talibat-u*, in person and gender. The verb *yadrus-un* is introduced into the derivation after the whole coordinate phrase has been derived, and after the agreement features of the phrase have been computed. In such case, the only option for the verb is to agree with &P, resulting in resolved agreement (third person masculine plural), as illustrated below:

(15)

TP
NP
pro_{SG}
(2) AGREE
T kanat F
VP
(1) AGREE
&P
NP1
(3) resolved agreement
V …
aT-Talibatu & NP2 yadrusuna
wa aT-Tullabu

Thus, the analysis derives resolved agreement without positing a plural DP-internal *pro* as proposed by Citko (2004) who builds on Den Dikken's (2001) analysis of pluringulars (nouns that can be both singular and plural like *committee*). The *pro* in my analysis is DP external and co-indexed with the thematic subject. Resolved agreement with preverbal subjects follows from the overwriting mechanism proposed above; resolved agreement in cases of sandwiching of the coordinate follows from the nature of left to right derivations and the timing of the merger of the agreeing element.

The analysis captures yet another peculiarity of FCA languages. Specifically, it explains the impossibility of licensing number sensitive items (NSIs) when FCA applies, which was reported for Arabic by Aoun *et al.* (1994) and Munn99, as exemplified below (Munn 1999, 650, (17)):

(16) a. *mša   ʕumar w   saʕid məžmuʕin
          left.3SG Omar and Said together
          'Omar and Said left together.'

      b. mšitu   ntuma w   ana məžmuʕin
          left.2PL you.PL and I   together
          'You and I left together.'   (Moroccan Arabic)

Munn (1999) argues that what is at stake in licensing NSIs is semantic plurality. This fact follows if the true subject is a null *pro* with SINGULAR number.

To conclude, in this short squib, I presented facts from three FCA-languages that show that the partial agreement seen with coordinate subjects is not conjunct agreement, and argues that it is just regular agreement with a null pro subject. The analysis is couched in terms of left to right derivations, which encode

linear relations in the syntax. The proposal leads to the conclusion that FCA as in Welsh is actually not CA; there is real CA, but it is always *closest* CA, contra Murphy and Puškar (*to appear*) who claim that the *closest* aspect of CA is an illusion.

References

Al Khalaf, Eman (2015), *Coordination and Linear Order*. Ph.D. thesis, University of Delaware.

Aljović, Nadira, and Muamera Begović (2016), "Morphosyntactic Aspects of Adjectival and Verbal First-Conjunct Agreement." *Journal Of Slavic Linguistics* 24: xx–yy.

Aoun, Joseph, Elabbas Benmamoun, and Lina Choueiri (2010), *The Syntax of Arabic*. Cambridge University Press, New York.

Aoun, Joseph, Elabbas Benmamoun, and Dominique Sportiche (1994), "Agreement, Word Order, and Conjunction in Some Varieties of Arabic." *Linguistic Inquiry* 25: 195–220.

Benmamoun, Elabbas (2000), *The Feature Structure of Functional Categories: A Comparative Study of Arabic Dialects*. Oxford: Oxford University Press.

Benmamoun, Elabbas, Archna Bhatia, and Maria Polinsky (2009), "Closest conjunct agreement in head final languages." *Linguistic Variation Yearbook* 9(1): 67–88.

Bhatt, Rajesh, and Martin Walkow (2013), "Locating agreement in grammar: An argument from agreement in conjunctions." *Natural Language and Linguistic Theory* 31(4): 951–1013.

Borsley, Robert D. (2009), "On the superficiality of Welsh agreement." *Nat Lang Linguist Theory Natural Language Linguistic Theory* 27(2): 225–265. ID: 5649909900.

Bošković, ʒeljko (2009), "Unifying First and Last Conjunct Agreement." *Natural Language and Linguist Theory* 27(3): 455–496.

Bruening, Benjamin (2013), "By-Phrases in Passives and Nominals." *Syntax* 16: 1–41.

Citko, Barbara (2004), "Agreement Asymmetries in Coordinate Structures." In Ogla Amaudova, Wayles Browne, Mari'a Luisa Rivero, and Danijela Stojanovi'c, eds., *Annual Workshop on Formal Approaches to Slavic Languages*, Ann Arbor, Michigan: Michigan Slavic Publications, pp. 91–107.

Čordalija, Nermina, Amra Bešić, Ivana Jovović, Nevenka Marijanović, Lidija Perković, Midhat šaljić, Dženana Telalagić, and Nedžad Leko (2016), "Grammars of Participle Agreement with Conjoined Subjects in Bosnian/Croatian/Serbian." *Journal Of Slavic Linguistics* 24: 71–112.

Den Dikken, Marcel (2001), ""Pluringulars", pronouns and quirky agreement." *The Linguistic Review* 18: 19–41.

Doron, E. (2000), "VSO and left-conjunct agreement : biblical Hebrew vs. modern Hebrew." In Andrew Carnie and Eithne Guilfoyle, eds., *The Syntax of the verb initial languages*, New York: Oxford University Press.

Fassi Fehri, Abdelkader (1993), *Issues in the Structure of Arabic Clauses and Words*. Netherlands: Springer Netherlands.

Holmstedt, Robert (2009), "So Called 'First Conjunct Agreement in Biblical Hebrew." In C. Hberl, ed., *Afroasiatic Srudies in Memonry of Robert Hetzron: Proceedings of the 25th Annual Meeting of the North American Conference on Afroasiatic Linguistics (NACAL 35)*, Newcastle on Tyne, UK: Cambridge Scholars, pp. 105–29.

Johannessen, Janne Bondi (1998), *Coordination*. Oxford: Oxford University Press.

Kayne, Richard S. (1994), *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.

Koopman, Hilda, and Dominique Sportiche (1991), "The Position of Subjects." *Lingua* 85: 211–258.

Larson, Bradley (2013), "Arabic Conjunct-Sensitive Agreement and Primitive Operations." *Linguistic Inquiry* 44(4): 611–631.

Lorimor, Heidi (2007), *Conjunctions and grammatical agreement*. Ph.D. thesis, niversity of Illinois at Urbana-Champaign.

Marušič, Franc, Andrew Ira Nevins, and William Badecker (2015), "The Grammars of Conjunction Agreement in Slovenian." *Syntax* 18(1): 39–77.

Marušič, Frank, Andrew Nevins, and Amanda Saksida (2007), "Last-Conjunct Agreement in Slovenian. Unpublished Manuscript."

McCloskey, James (1986), "Inflection and Conjunction in Modern Irish." *Natural Language and Linguistic Theory* 4(2): 245–281. URL `http://www.jstor.org/stable/4047568`.

McCloskey, James (1997), "Subjecthood and Subject Positions." In Liliane Haegeman, ed., *Elements of Grammar: Handbook in Generative Syntax*, Dordrecht: Kluwer, pp. 197–235.

Muhammad, Muhammad A. (1990), "The problem of subject-verb agreement in Arabic." In Mushira Eid, ed., *Perspectives on Arabic Linguistics: Papers from the Annual Symposium on Arabic Linguistics*, vol. 1, pp. 95–125.

Munn, Alan (1999), "First Conjunct Agreement: Against a Clausal Analysis." *Linguistic Inquiry* 30(4).

Murphy, Andrew, and Zorica Puškar (*to appear*), "Closest Conjunct Agreement is an Illusion: Evidence from gender agreement in Serbo-Croatian." *Natural Language and Linguistic Theory* : xx–yy.

Phillips, Colin (1996), *Order and Structure*. Ph.D. thesis, Massachusetts Institute of Technology. Distributed by MIT Working Papers in Linguistics, Cambridge, Mass.

Phillips, Colin (2003), "Linear Order and Constituency." *Linguistic Inquiry* 34(1): 37–90.

Soltan, Usama (2006), "Standard Arabic subject-verb agreement asymmetry revisited in an Agree-based minimalist syntax." University of Maryland at College Park.

Soltan, Usama (2007), "Standard Arabic subject-verb agreement asymmetry revisited in an Agree-based minimalist syntax." In Cedric Boeckx, ed., *Agreement Systems*, p. 239265.

Sportiche, Dominique (1988), "A Theory of Floating Quantifiers and Its Corollaries for Constituent Structure." *Linguistic Inquiry* 19: 425–449.

Willer-Gold, Jana, Boban Arsenijević, Mia Batinić, Nermina čordalija, Marijana Kresić, Nedžad Leko, Franc Lanko Marušič, Tanja Milić ev, Nataša Milić ević, Ivana Mitić, Andrew Nevins, Anita Peti-Stantić, Branimir Stanković, Tina šuligoj, and Jelena Tušek (2016), "Conjunct Agreement and Gender in South Slavic: From Theory to Experiments to Theory." *Journal Of Slavic Linguistics* 24: 71–112.

Willis, David (2012), "The rise and fall of agreement in the Welsh pronominal system." A poster presented at the 7th Celtic Linguistics Conference (CLC7), Université de Rennes, Rennes, An Bhriot

in, An Fhrainc. Available at `http://www.languagesciences.cam.ac.uk/`
`posters-from-brown-bag-lunches/the-rise-and-fall-of-agreement-in-the-welsh-pronomial-syst`

Zhang, Niina Ning (2010), *Coordination in Syntax*. Cambridge: Cambridge University Press.