

Embedded Questions and Sluicing in Georgian and Svan*

David Erschler

University of Massachusetts Amherst

erschler@gmail.com

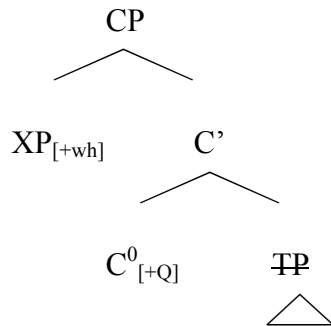
DRAFT VERSION. Comments are most welcome!

Georgian and Svan exhibit a construction similar to classical sluicing: that is, translational analogs are grammatical of sentences like *'Mary cooked something, but I don't know what'*. I provide a description of these phenomena and show that this construction in both languages satisfies standard tests for sluicing. I show that wh-movement in Georgian targets a lower position than in, say, English, namely, Spec FocP. Accordingly, I argue that the account developed in Toorsanvandani (2008) for Persian and Van Craenenbroek & Lipták (2006, 2013) for Hungarian is applicable in this case as well. Specifically, sluicing-like constructions in Georgian are derived by movement of wh-phrases into this position and subsequent deletion of the complement of the FocP. The syntax of the Svan counterpart of this construction differs in some crucial aspects and its analysis is yet to be obtained.

1. Introduction

Although the subject of extensive research in theoretical syntax for decades, ellipsis is still little studied in the languages of the Caucasus. As for many other varieties of ellipsis, the discovery of SLUICING, that is, of ellipsis in embedded wh-questions, illustrated in 1a-b, as well as the coining of the term itself, is due to Ross (1969/2012). The “classical” sluicing has been defined and studied for languages that exhibit wh-fronting, primarily single wh-fronting. It is on the basis of data from such languages that standard tests for sluicing have been formulated. The now widely accepted analysis in the minimalist framework, introduced and argued at book length by Merchant (2001), is to posit that the wh-phrase is moved into Spec CP, while the complement of the CP is deleted, 1c. The deletion is triggered by a feature hosted by the interrogative C head.

- (1) a. Abby was reading something, but I don't know **what**.
b. Jack called, but I don't know **when/how/why/where from**. Merchant (2008)
c.



* I thank Natia Dundua, Ketevan Gadilia, Helen Giunashvili, Lia Kapanadze, Lasha Kokilashvili, Lisa Kokilashvili, and Marie Margishvili for Georgian data and judgments, as well as Rajesh Bhatt, Alice Harris, Jason Merchant, and Léa Nash for discussions. I am obliged to Alice Harris, Maria Polinsky, Alexander Rostovtsev-Popiel, Pavel Rudnev, and Ellen Woolford for their commentaries on earlier drafts of this paper. For Svan data, I thank Avtandil Chkhetiani, Archil Gelovani, Chato Gudjedjiani, Irma Japaridze, Nargiza Khorguani, Lia Nikoloziani, and Guram Udesiani. I thank Mariam Manjgaladze and Alexander Rostovtsev-Popiel for their help in arranging the fieldwork. The Svan data were collected in the course of my fieldwork in Mestia, Georgia in the summer of 2014. It goes without saying that all possible remaining errors are my sole responsibility. The fieldwork was supported by the Department of Linguistics of University of Massachusetts Amherst and by NSF grant 1137341.

Although the cross-linguistic breadth of sluicing studies has greatly increased in the course of the years that passed since the appearance of Merchant (2001), see Merchant & Simpson (2012) and more references in Erschler (2014), it is still worth the while to undertake such a study for yet a new language, especially when the latter exhibits a pattern of wh-question formation different from the canonical wh-fronting.

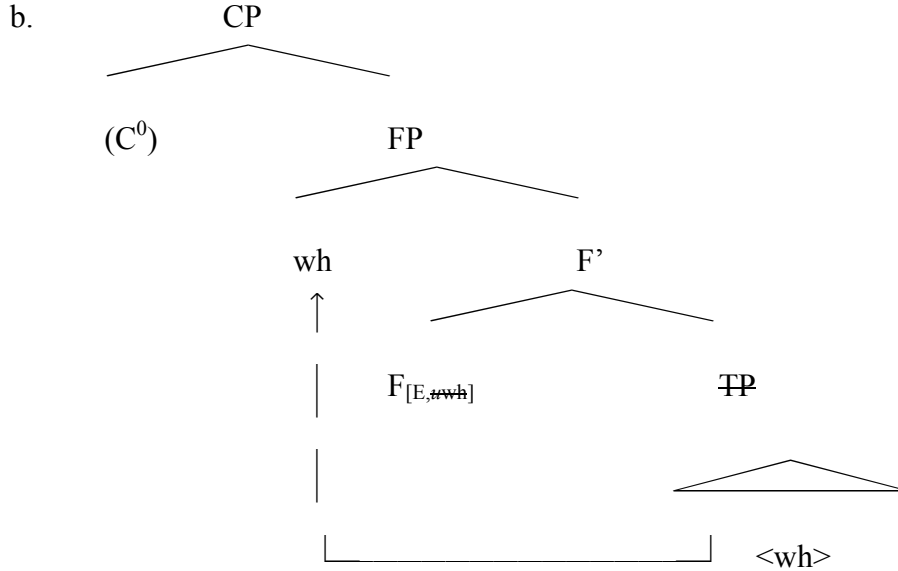
The presence of sluicing-like phenomena in languages with a different structure of wh-questions than the one observed in West Germanic can be puzzlement for movement *cum* deletion approaches: the analysis depicted in 1c cannot apply to them *verbatim*. However, constructions that at least superficially resemble sluicing are relatively common in languages that lack wh-movement into a sentence-initial position, as noticed already in Merchant (2001: 84-85).

In the cases when wh-phrases still move, although not as high as into SpecCP, it can be reasonable to posit that the language under consideration possesses a high FocP (which is still below the CP), and that the sluicing deletes the complement of this FocP. This, for instance, is implemented in Toosarvandani (2008) for Persian. This language is often assumed to exhibit wh in situ, see arguments for this assumption, as well as further references, in Karimi & Taleghani (2007), or, alternatively, adjunction of wh-words to vP at the very highest, as proposed by Kahnemuyipour (2001). However, wh-phrases in Persian are able to undergo focusing, which motivates Toosarvandani's (2008) analysis¹, 2b.

- (2) a. kesi man-o hol dad
 someone I-ACC² push s/he.gave
 væli ne midunam (ke) ki
 but NEG I.know COMP who
 'Someone pushed me, but I don't know who.' (Dara Fourouzan, p.c.)

¹ More precisely, Toosarvandani (2008) does not have the C layer in his tree, but given that his own data show that the complementizer *ki* can be present above the wh-phrases in embedded questions and sluices, I have taken the liberty of adding the CP to his tree.

² Glosses: ACC accusative; COMP complementizer; DAT dative; EMB embedded question marker; ERG ergative; GEN genitive; INS instrumental; LOC locative; MOD modal; NEG negation; NOM nominative; PL plural; PRS present; PST past; Q interrogative; Q.COMP interrogative complementizer; REL relativizer; SG singular.



Any analysis of sluicing that proposes that *wh*-phrases are hosted by a projection below the CP will predict that sluices will allow overt complementizers, should these be possible in embedded questions, a generalization borne out by the Persian data in 2b.

Alternatively, sluicing-like constructions can arise via a mechanism other than ellipsis in embedded *wh*-questions. The matter is subject to cross-linguistic variation, see a systematic overview in Vicente (2014). Specifically, sluicing-like constructions can be either manifestations of a different type of ellipsis, for instance, stripping, as it is sometimes proposed for Japanese, see Fukaya and Hoji (1999) and Nakamura (2012). Yet another potential source for a sluicing-like construction could be embedded copular clauses with omitted copula, see, among others, Adams and Tomioka (2012) for Mandarin.

This paper will deal with sluicing in two South Caucasian languages without canonical *wh*-fronting, namely, Georgian and Svan. Sluicing in either of these languages has not been addressed in the literature so far.

In Georgian, *wh*-phrases are placed into immediately preverbal position, which I identify with Spec FocP, 3a. In embedded questions, the interrogative complementizer *tu* can optionally precede *wh*-phrases, 3b. This complementizer can also be retained in sluices, 3c.

- (3)
- | | | | | |
|----|--|-----------|----------------|-------------|
| a. | <p'ur-i> | vin | <*p'ur-i> | iq'ida? |
| | bread-NOM | who(ERG) | | s/he.bought |
| | 'Who bought bread?' | | | |
| b. | rezo mixvda | (tu) | rat'om c'avida | manana |
| | Rezo s/he.realizedd | Q.COMP | why s/he.left | Manana |
| | 'Rezo realized why Manana left.' | | | |
| c. | manana-m | gušin | rayac(a) | iq'ida, |
| | Manana-ERG | yesterday | something.NOM | s/he.bought |
| | magram | ar | vici (tu) | ra |
| | but | NEG | I.know Q.COMP | what.NOM |
| | 'Manana bought something yesterday, but I don't know what' | | | |

To account for these facts, I am going to develop an analysis similar to the one that Toosarvandani (2008) proposed for Persian, namely, to argue that sluices are derived by moving wh-phrases into specifiers of the FocP and subsequently deleting its complement.

The Svan facts diverge from the Georgian ones in two aspects: first, negative indefinites may intervene between the wh-phrases and the verb in a Svan wh-question, 4a, which indicates that the clause architecture in Svan is somewhat different from Georgian. Second, while the wide-purpose complementizer *er(e)* is possible in non-reduced embedded questions, 4b, it cannot be retained in a sluice, 4c.

(4) Upper Bal Svan

- a. jær-d **dær-s** **mamgweš** laxwem?
 who-ERG nobody-DAT nothing gives
 ‘Who didn’t give anything to anyone?’
- b. gela-s ču=xoxa, [**ere** šoma=do ænqdeni nino]
 Gela-DAT PRV=knows COMP when=EMB arrives Nino
 ‘Gela knows when Nino arrives.’
- c. manana-d la:t mo:le anq’id
 Manana-ERG yesterday something bought
 mare mam mixa (***ere**) mæj=do
 but NEG I.know COMP what=EMB
 ‘Manana bought something yesterday, but I don’t know what.’

These facts indicate that a different analysis is required for the sluicing-like construction in Svan. For the time being, I only provide a descriptive account of sluicing in this language, leaving an analysis for future research.

The paper is organized as follows: section 2 provides some necessary background on South Caucasian grammar; section 3 introduces basic facts about sluicing; in section 4, various tests for sluicing are discussed and applied to Georgian sluicing-like constructions. In Section 5, I examine adposition drop under sluicing and show, that, although Georgian data at first glance contradict Merchant’s (2001) generalization about the correlation between adposition stranding and adposition drop in sluices, there are separate factors in Georgian that confound the picture. In Section 6, I show that Georgian sluicing site can be embedded. In Section 7, I investigate compatibility of sluices with complementizers and patterns of complementizer placement in sluices. In Section 8, I argue against analyzing Georgian sluicing as a reduced copular construction. In Section 9, I show that sluicing and stripping are separate phenomena in Georgian. In Section 10 I lay out my proposal for Georgian. In Section 11, I briefly present the parallel Svan data and discuss how they differ from their Georgian counterparts. Section 12 concludes.

2. Background on South Caucasian

Georgian and Svan belong to the small South Caucasian (also called Kartvelian) language family, Boeder (2005). They are mostly spoken in Georgia. Georgian has about 3 million speakers, whereas Svan is spoken by several tens of thousands and is endangered. In this paper, I use data from modern colloquial Georgian as spoken in Tbilisi, the capital of the country, and from the two Svan dialects of Upper Svaneti, Upper and Lower Bal. South Caucasian languages are notorious for their complex verb morphology, which is difficult to gloss. Given that the verb

morphology does not seem to be relevant for my present purposes, I only provide simplified translations of the verbs in the example sentences.

2.1 Basics of Georgian Clause Structure

Georgian has fairly free word order in simple clauses, see, e.g. Harris (1981), Apridonidze (1986), Testeleis (1998), and Skopeteas et al. (2009). GB/Minimalist analyses of the simple sentence structure were proposed in Nash-Haran (1992), Nash (1995), and McGinnis (1995, 1997), but admittedly the evidence for structural priority between arguments is fairly elusive, as shown by Amiridze (2006), Wier (2011), and Wier (2014), and constituency tests are not particularly clear. However, for the purposes of this paper the finer internal structure of the extended VP is largely irrelevant, nor, as far as I am able to tell, do the matters discussed here impinge in any way upon the controversy over the structure of the lower domain of the Georgian clause. The language shows pro-drop and is famous for its complex splits in case-marking of main arguments, see, e.g., Harris (1981) for a thorough description. It is not clear whether Georgian has a DP: I am not aware of any evidence for the existence of covert D in Georgian, whereas overt articles are definitely not attested, see Bošković (2009) for arguments against positing the existence of a DP under such circumstances.

2.2 Wh-questions in Georgian

In Georgian simple clauses, wh-movement proceeds (descriptively) into the preverbal position, Harris (1981), which structurally corresponds to Spec FocP, Nash (1995). Only negation markers may (and actually must) intervene between the wh-phrase³ and the verb: the sentence in 5b is ungrammatical, where the direct object *p'uri* 'bread' intervenes, while the sentence with a negative marker in 5c is grammatical.

- (5)
- | | | | |
|----|----------------------------|---------------|-------------------|
| a. | <i>p'ur-i</i> | <i>vin</i> | <i>iq'ida?</i> |
| | bread-NOM | who(ERG) | s/he.bought |
| | 'Who has bought bread?' | | |
| b. | <i>*vin</i> | <i>p'ur-i</i> | <i>iq'ida?</i> |
| | who(ERG) | bread-NOM | s/he.bought |
| c. | <i>p'ur-i</i> | <i>vin</i> | <i>ar iq'ida?</i> |
| | bread-NOM | who(ERG) | NEG s/he.bought |
| | 'Who hasn't bought bread?' | | |

Multiple wh-movement is obligatory (see a discussion in Section 10 of the nature of this movement).

If wh-phrases are D-linked, it is marginally possible to put one of them in the postverbal focus position, see Skopeteas & Fanselow (2009) about the latter.

- (6)
- | | | | | |
|-------------------------------|----------------|----------------|----------------|-----------------|
| <i>??romel-ma</i> | <i>bič'-ma</i> | <i>garecxa</i> | <i>romel-i</i> | <i>mankana?</i> |
| which-ERG | boy-ERG | washed | which-NOM | car.NOM |
| 'Which boy washed which car?' | | | | |

³ Unless the wh-phrase is *rat'om* 'why', Harris (1984).

Superiority constraints, that is, restrictions on the order of wh-phrases in a clause, do not seem to be operative⁴ for many speakers of Georgian (*pace* Amiridze (2006: 64) and Harris (1981: 15), example 13e), 7. Pairs of sentences in 7a-b and 7c-d additionally show that the ordering of wh-phrases is not affected by animacy, unlike the situation that obtains in Ossetic, Erschler (2012).

- (7) a. ra vis ayizianebs?
 what.NOM who.DAT annoys
 ‘What annoys who?’
 b. vis ra ayizianebs?
 who.DAT what.NOM annoys
 Idem
 c. vin ra iq’ida?
 who(ERG) what.NOM bought
 ‘Who bought what?’
 d. ra vin iq’ida?
 what.NOM who(ERG) bought
 Idem

Cross-linguistically, it is sometimes the case that sharper judgments for superiority can be obtained when wh-phrases are extracted from a dependent clause, see e.g. Grewendorf (2005: 38) for German⁵. However, as we will see in the next subsection, such data are not replicable in Georgian for a principled reason: extraction from dependent clauses is not possible in this language.

2.3 Embedded finite clauses

A wide variety of matrix verbs in Georgian allow or require a finite complement clause, Vamling (1989: 60). The default complementizer *rom*, which is used in complements, relative clauses, and some adverbial clauses, is ungrammatical in embedded questions, where the complementizer *tu* must be used instead:

- (8) rezo mixvda (tu/*rom) rat’om c’avida manana
 Rezo s/he.realizedd COMP why s/he.left Manana
 ‘Rezo realized why Manana left.’

The default position of a complement clause is sentence-final; the complementizer is then preferably clause-initial, 9. The behavior of the complementizer *rom* in the capacity of relativizer is subject to much more complex restrictions, Foley (2013).

- (9) manana pikrobs [**rom** rezo (*?**rom**) saxl-s (?**rom**)aşenebs]
 Manana.NOM thinks COMP Rezo.NOM house-DAT builds
 ‘Manana thinks that Rezo builds a house.’

However, when the dependent clause is preposed, the indicative complementizer may not occupy the clause-initial position.

⁴ It well might be that a large-scale rating experiment, similar to one carried out for German by Featherston (2005) will discover asymmetries between different orders of wh-phrases in questions, but this needs to be left for future research.

⁵ I am obliged to Kyle Johnson for pointing out this publication to me.

- (10) [(^{*}rom) rezo (?rom) saxl-s (^{ok}rom) ašenebs]
 COMP Rezo.NOM house-DAT builds
 mxolod manana pikrobs
 only Manana.NOM thinks
 ‘That Rezo builds a house, only Manana thinks.’

Movement out of finite dependent clauses, except when the main clause is headed by certain modal verbs, is impossible in Georgian, Harris (1981).

- (11) a. gela-m tkva [rom manana c’avida kalak=ši]
 Gela-ERG s/he.said COMP Manana.NOM s/he.left city=LOC
 ‘Gela said that Manana left for the city.’
 b. *gela-m sad tkva [rom manana t_{sad} c’avida]?⁶
 Gela-ERG where s/he.said COMP Manana.NOM t_{where} s/he.left
 ‘Where did Gela say that Manana left for?’

The matrix clause interpretation of a wh-phrase that is situated in a dependent clause is not possible either.

- (12) *manana-s sdžera/manana pikrobs [rezo
 manana-DAT believes/Manana.NOM thinks Rezo.NOM
 rodīs čamova]?
 when s/he.will.arrive
 Intended reading: ‘When does Manana believe/think that Rezo t_{when} will arrive?’

In embedded wh-questions, it is possible, although optional, to use the interrogative complementizer⁷ *tu*. It must precede the wh-phrase, no matter where the wh-phrase is in the clause.

- (13) a. rezo mixvda <tu> rat’om <*tu> c’avida
 Rezo.NOM s/he.realized Q.COMP why Q.COMP s/he.left
 manana
 Manana.NOM
 ‘Rezo realized why Manana left.’
 b. tu rat’om ar c’avida manana rezo
 Q.COMP why NEG s/he.left Manana.NOM Rezo.NOM
 mixvda
 s/he.realized
 ‘Rezo realized why Manana did not leave.’

However, in embedded Y/N questions *tu* cannot be clause-initial.

⁶ This sentence is grammatical on an (uninteresting) interpretation with the wh-phrase originating in the matrix clause: ‘For which location x, did Gela say at x [that Manana left]?’

⁷ Tschenkéli (1958: 199) reports that *tu* contributes to the meaning of the sentence: “Im indirekten Fragesatz wird vor das Fragewort oft ein თუ gesetzt, welches dazu dient, die Frage hervorzuheben oder zu verstärken. Im solchen Fällen lässt sich თუ etwa wiedergeben durch “eigentlich.” I have not been able to assess this claim, but, at any rate, this does not seem to be important for the purposes of this paper, nor does this contradict my interpretation of *tu* as a complementizer.

- (14) a. davit-s unda icodes <***tu**> axla <**tu**> tbila?
 david-DAT wants s/he.would.know Q now Q is.warm
 ‘David wants to know whether it’s warm now.’
 b. ar vici <***tu**> ciq’vebi **tu** k’argad daprinaven
 NEG I.know Q squirrels Q well they.would.fly
 ‘I don’t know whether squirrels fly well.’

Although the interrogative complementizer *tu* is most commonly placed in the second position of the embedded clause, it can occur further to the right, up to the immediately preverbal position – behavior analogous to that of floating complementizers in Ossetic, Erschler (2012). So far, I have not been able to discover any differences in the meaning that would depend on the specific placement of *tu*.

- (15) a. davit-s unda icodes bost’on-ši axla **tu** tbila
 david-DAT wants s/he.would.know Boston-in now Q warm
 ‘David wants to know whether it’s warm in Boston now.’
 b. ar vici giorgi-m bavšv-s **tu** ač’ama
 NEG I.know Giorgi-ERG child-DAT Q s/he.fed
 ‘I don’t know whether Giorgi fed the child.’

The same holds for preposed embedded questions. I do not consider non-finite dependent clauses in this paper.

3. The sluicing-like construction

Georgian exhibits a construction that is at least superficially similar to sluicing. Any *wh*-phrase, no matter whether it is an argument or an adjunct, may appear in this construction.

- (16) a. Argument
 manana-m gušin rayac(a) iq’ida
 Manana-ERG yesterday something.NOM s/he.bought
 magram ar vici ra
 but NEG I.know what.NOM
 ‘Manana bought something yesterday, but I don’t know what’
 b. Adjunct
 šen sadyac(a) dat’ove gasayeb-i magram
 you somewhere you.left key-NOM but
 (me) ar daminaxavs sad
 I NEG I.have.seen where
 ‘You left the key somewhere, but I haven’t seen where.’

In complete agreement with the fact that Georgian has obligatory multiple *wh*-movement, multiple *wh*-remnants in sluices are possible as well.

- (17) a. kuča=ši viyac(a) viyaca-s eloda
 street=LOC someone.NOM someone-DAT s/he.waited
 magram ar maxsovs vin vis
 but NEG I.remember who.NOM who.DAT
 ‘Somebody was waiting for somebody in the street, but I don’t remember who waited for who.’
- b. gušin viyac(a) viyaca-s=tan cekvavda
 yesterday someone someone-DAT=with s/he.danced
 magram ar maxsovs vin vis=tan
 but NEG I.remember who.NOM who.DAT=with
 ‘Yesterday somebody danced with somebody, but I don’t remember who with who.’

As in matrix questions, superiority constraints are inoperative in sluices; compare 18 and 7.

- (18) viyacas rayaca ayizianebs magram ar vici
 someone.DAT something.NOM annoys but NEG I.know
- a. ra vis
 what who.ACC
- b. vis ra
 who.ACC what
 ‘Something annoys somebody, but I don’t know what (annoys) who.’

Nothing can be retained after the wh-phrase(s) in a sluice, not even negation. This fact will serve as evidence for an analysis that assumes that sluices are derived by deleting the sister of the wh-phrase(s) in the syntactic structure.

- (19) viyaca-m ar šeč’ama tavisī sauzme
 someone-ERG NEG s/he.ate self’s breakfast.NOM
 magram ar vici vin (*ar)
 but NEG I.know who.NOM NEG
 ‘Somebody didn’t eat their breakfast, but I don’t know who.’

However, some syntactic material may precede wh-phrases in sluices, cf. similar Hungarian data in van Craenebroek (2012: 42). I will call such constructions “extended sluices”. Their existences matches the observation made above in Section 2.2 that wh-phrases do not need to be sentence-initial in a matrix wh-question, compare 20 with 5a and 5c.

- (20) a. guram-i gušin rezo-m cema
 Guram-NOM yesterday Rezo-ERG s/he.beat.up
 ar vici dyes vin
 NEG I.know today who(ERG)
 ‘Yesterday, Rezo beat up Guram. I don’t know who (beat him up) today.’
- b. guram-i rezo-m cema
 Guram-NOM Rezo-ERG s/he.beat.up
 ar vici zurabi vin
 NEG I.know Zurab who(ERG)
 ‘Rezo beat up Guram. I don’t know who (beat up) Zurab.’

In both sentences in 20, the pre-wh material is arguably the contrastive topic. However, this does not need to be the case in sluices in general. Focused XPs may appear there as well, as is the case in the following example, where the XP *Manana* is associated with ‘only’ and, consequently, focused.

- (21)
- | | | | | |
|----------------|-----------------|--------------|--------------|----------|
| manana-m=ac | da | nino-m=ac | orive-m | zogierti |
| Manana=ERG=too | and | Nino-ERG=too | both-ERG | some |
| mosc'avle | šeakes. | zogierti | mosc'avle | k'i |
| student | they.praised | some | student | but |
| mxolod | manana-m. | me | ubralod | ar |
| only | Manana-ERG | I | simply | NEG |
| mxolod | manana-m | vin | ?(šeako) | |
| only | Manana-ERG | who | s/he.praised | |
- ‘Both Manana and Nino praised some students, but (there were) some students (that) only Manana praised. But I simply don’t remember, who only Manana (praised).’

Finally, anaphors may appear there, see Amiridze (2006) for data showing that *tav*-anaphors indeed need to be bound in the minimal finite clause.

- (22)
- a.
- | | | | | |
|-----------|-----------------------|---------------|--------------|--------------------------|
| šaršan | bakar-ma _i | manana-s | xma | misca. |
| last.year | Bakar-ERG | Manana-DAT | voice | s/he.gave |
| magram | ar | vici | tavis | tav-s_i |
| but | NEG | I.know self's | self-DAT | rodis |
- Last year Bakar voted for Manana, but I don't know when (he voted) for himself.
- b.
- | | | | | |
|-----------|-----------------------|---------------|---------------|-------------------------|
| gušin | bakar-ma _i | manana-s | p'ort'ret'-i | daxat'a |
| yesterday | Bakar-ERG | Manana-GEN | portrait-NOM | s/he.painted |
| magram | ar | vici | tavisi | tavi_i |
| but | NEG | I.know self's | self-NOM | rodis |
- ‘Yesterday Bakar painted a portrait of Manana, but I don’t know when (he painted) himself.’

Given that Georgian reflexives need to be bound in the ambient finite clause, Amiridze (2006), these data provide evidence for the existence of deleted structure in extended sluices.

4. Tests for sluicing

One very strong argument for a movement *cum* deletion analysis of sluicing is the cross-linguistically wide-spread requirement for the wh-phrase in a sluice to match its antecedent in case. This requirement is fully operative in Georgian. For instance, in 23a, the wh-remnant *ra* ‘what’ may only stand in the dative, like its antecedent *rayaca* ‘something’, whereas in 23b the same holds for the instrumental.

- (23)
- a.
- | | | | |
|--------|----------|---------------|-------------------|
| manana | xval | rayaca-s | iq'idis, |
| Manana | tomorrow | something-DAT | s/he.will.buy |
| magram | ar | v-ici | ra-s/*ra |
| but | NEG | 1SG.S-know | what-DAT/what.NOM |
- ‘Manana will buy something tomorrow, but I don’t know what.’

- b. čveni dzayl-i rayac-it moic'amlā,
 our dog-NOM something-INS got.poisoned
 magram ver gaviget r-iti/*ra
 but MOD.NEG we. understood what-INS/what-NOM
 'Our dog got poisoned with something, but we couldn't understand what with.'

As in "classical" sluicing languages, such as English or Dutch, Georgian exhibits sprouting, that is, the sluice does not need an overt antecedent.

(24) a. Argument Sprouting

rezo č'ams, magram ar vici ra-s
 Rezo.NOM eats but NEG I.know what-DAT
 'Rezo eats but I don't know what.'

b. Adjunct Sprouting

rezo movida magram, ar vici vis=tan ertad
 Rezo.NOM s/he.arrived but NEG I.know who.DAT=with together
 'Rezo arrived, but I don't know with whom.'

Furthermore, Georgian sluicing repairs strong island violations⁸. As we have seen already, Georgian does not allow any movement out of finite clauses. However, respective sluices are fully grammatical. Below, I illustrate alleviation of several of the classically known strong island constraints.

Complex NP Constraint

- (25) a. mat undoda-t rom vinme daekiravebinat
 they.ERG they.wanted COMP someone they.will.rent
 vin=c icis ertert-i evrop'ul-i ena.
 who=REL knows some-NOM European-NOM language.NOM
 magram ar vici romel-i ena(*=a).
 but NEG I.know which-NOM language.NOM=be.PRS.3SG
 'They wanted to hire someone who knows one of European languages.
 But I don't know which language (*it is).'

- b. uča cxovrobs saxl=ši, sad=ac viyaca-m
 Ucha lives house=LOC where=REL someone-ERG
 viyac(a) mok'la, magram ar
 someone-NOM s/he.killed but NEG
 maxsovs vin vin
 I.remember who(ERG) who(NOM)
 'Ucha lives in a house where somebody killed somebody, but I don't remember who (killed) who.'

⁸ Strictly speaking, the mechanism by which this occurs is still unknown. There exist proposals that argue for a non-isomorphic underlying structure for sluices whose antecedent is contained in an island, see e.g. Barros, Elliott & Thoms (2014) and Marušič & Žaucer (2013). However, given that island repair by sluicing is subject to cross-linguistic variation, see a.o. Nakamura (2012), I believe that it can be still used as a test for sluicing. Whatever mechanism is eventually found responsible for alleviation of island violations, this mechanism, or its slight modifications, will be operative in all languages that show standard sluicing.

- c. zurab-i modis cxen-it romeli=c viyac(a)
 Zurab-NOM comes horse-INS which=REL someone
 sxva-s ek'utvnis, magram ar vici vis
 other-DAT belongs but NEG 1SG.S-know who.DAT
 'Zurab is riding a horse that belongs to somebody else. But I don't know to who.'

Coordinate Structure Constraint

- (26) a. tornik'e-m iq'ida gazet'-i da c'ign-i
 Tornike-ERG s/he.bought newspaper-NOM and book-NOM
 magram ar vici romel-i c'ign-i
 but NEG I.know which-NOM book-NOM
 'Tornike bought a newspaper and a book, but I don't know which book.'

Adjunct Constraint

- (27) tornik'e c'avida q'vavil-eb-is saq'idlad
 Tornike.NOM s/he.left flower-PL-GEN for.buying
 imit'om rom viyac(a) gogo mosc'ons,
 because COMP someone.NOM girl.NOM likes
 magram ar utkvams romel-i gogo(=a)
 but NEG s/he.said which-NOM girl.NOM(=be.PRS.3SG)
 'Tornike went to buy flowers, because he likes some girl.
 But he did not say which girl (it is).'

Sluicing, both "classical" and extended, can go backwards, that is, the sluicing site may linearly precede its antecedent.

- (28) a. ar vici ra, magram manana-m
 NEG I.know what.NOM but Manana-ERG
 gušin rayac(a) iq'ida
 yesterday something s/he.bought
 'I don't know what, but Manana bought something yesterday.'
- b. zurab-i vin ar vici, magram guram-i
 Zurab-NOM who NEG I.know but Guram-NOM
 rezo-m cema
 rezo-ERG s/he.beat.up
 Who (beat up) Zurab, I don't know, but Rezo beat up Guram.

To summarize, the sluicing-like construction in Georgian satisfies all the standard tests that the *bona fide* sluicing has been found to satisfy.

5. Adposition drop in sluicing

Famously, the movement *cum* deletion theory of sluicing makes the following prediction, Merchant (2001: 91): if the language does not allow adposition stranding in wh-questions, it will not allow adposition drop under sluicing either. This generalization is not free from exceptions, see, e.g. Sag & Nykiel (2011) and Leung (2014), and some effort has been spent to provide alternative derivations to sluicing-looking sentences that ostensibly violate it, see, a.o., Stjepanovic (2012) and Rodrigues et al (2009).

Provided that the Georgian sluicing-like construction is indeed derived by movement and deletion, Georgian is yet another example of a language that does not allow adposition stranding, but does show adposition drop under sluicing. However, as we will see below, Georgian does not necessarily provide a counterexample to Merchant's generalization.

Modern Georgian only has postpositions, Hewitt (1995). In regular wh-questions, adposition stranding is ungrammatical:

- (29) a. vis=tan ertad midixar?
 who.DAT=with together you.go
 'Who are you(sg.) going with?'
 b. *vis=tan midixar ertad?
 who.DAT=with you.go together
 Idem

Under sluicing, the picture is more complex. For monosyllabic postpositions which assign the dative to their complement and which are probably undergoing reanalysis into case markers in Modern Georgian, adposition drop is impossible.

- (30) manana viyaca=ze sasacilo ist'oria-s mohq'va
 Manana someone=on funny story-DAT s/he.told
 magram (*is) damavic'q'da vis*(ze)
 but that.NOM I.forgot who.DAT=on
 'Manana told a funny story about somebody, but I don't remember about who.'

However, adposition drop becomes at least marginally possible when phonologically heavy adpositions are taken into account. Sentences with dropped adpositions are still judged very informal, and not all the consultants acknowledge that they are grammatical.

- (31) a. k'at'a imaleboda rayac-is kveš
 cat s/he.hid something-GEN under
 magram ar šemimčnevia r-is ?(kveš)
 but NEG I.am.sure what-GEN under
 'The cat hid under something, but I'm not sure what.'
 b. guram-ma rayac-is šesaxeb ilap'arak'a
 Guram-ERG something-GEN about s/he.spoke
 magram ar maxsovs r-is ?(šesaxeb)
 but NEG I.remember what-GEN about
 'Guram spoke about something, but I don't remember what.'
 c. rezo viyaca-s=tan ertad movida,
 Rezo someone-DAT=with together s/he.arrived
 magram ar vici vis=tan (ertad)
 but NEG I.know who.DAT with
 'Rezo arrived with somebody, but I am not sure who.'

Nevertheless, this circumstance might not be detrimental to Merchant's generalization, because postposition ellipsis is possible⁹ in other environments as well.

⁹ One of my consultants rejects postposition drop in any environment, including sluicing.

- (32) a. coordinated structures
 k'at'a imaleboda login-is kveš da dzayli magid-is
 cat s/he.was.hiding bed-GEN under and dog table-GEN
 'The cat was hiding under the bed and the dog (was hiding under) the table.'
- b. fragment answers
 A: k'at'a imaleboda login-is kveš
 cat s/he.was.hiding bed-GEN under
 'The cat was hiding under the bed'
 B: ara magid-is
 no table-GEN
 'No, (under the) table!'

Additionally, at least some such postpositions may occur without would-be complements, i.e. they show adverb-like behavior.

- (33) ertad arian
 together they.are
 'They are together.'

It should be noted that sentences like 32a are problematic for the idea that a Georgian postposition, say, *kveš* 'under' heads a phrase whose complement is the respective NP (or DP), and the standard feature-driven approach to ellipsis, introduced in Lobeck (1995) and adopted in Merchant's (2001) theory of sluicing: under their theoretical assumptions, it would be impossible to elide the head without eliding its complement. One possible solution is to assume that a postposition, like a possessor, occupies Spec NP, and, also like a possessor, is linearized to the left of its head. A systematic investigation of this issue is beyond the scope of this paper.

6. Embedded sluicing

One remarkable property of sluicing in English and other well-studied languages is that the sluicing site can find an antecedent no matter how deep the sluicing site is embedded.

- (34) Mary cooked something and Jim suspects [that Sue realizes [that Jill knows what]]

This is one of the properties that distinguish sluicing from stripping in English¹⁰. The latter is unable to find an antecedent when embedded.

- (35) *Mary cooked something and Sue realizes [that Jill too]]

Returning to Georgian, we see that sluicing is possible in embedded contexts. However, the complementizer is highly dispreferred in the ambient clause.

- (36) a. [Antecedent clause] and/but [Ambient clause [(?*COMP) [Main clause [Sluice]]]
 b. rezo-m šeč'ama rayac(a) da večvob,
 Rezo-ERG s/he.ate something and I.suspect
 ?(rom) rusudan-ma icis ra
 COMP Rusudan-ERG knows what.NOM
 'Rezo ate something and I suspect that Rusudan knows what.'

¹⁰ Cross-linguistically this is not necessarily so: in Russian, e.g., stripping embeds easily.

This could in principle mean that what looks like an embedded clause in 36 is in actuality a quotation. However, as 37b shows, a sluice can be embedded in a relative clause -- a fact that indicates that the odd behavior of complementizer in 36 might be an independent phenomenon.

- (37) a. me zust'ad rva saat=ze c'aval
 I exactly 8 hour=on I.will.leave
 vera-vin (ver) unda mixvdes (tu) sad
 NEG.MOD-who NEG.MOD should s/he.would.realize Q where
 'I will depart exactly at eight. No one would realize where.'
- b. yam-it bneldeba. axla me čamovedi
 night-INS it.gets.dark now I I.arrived
 iset kveq'ana=ši [sad=ac q'vela=m [ici-s (tu) rat'om]]
 such country=LOC where=REL everyone=ERG knows Q why
 'It gets dark at night. Now I have arrived in a country where everyone knows why'

7. Sluicing and complementizers

As was discussed in the introduction, the standard deletion analysis of sluicing predicts that complementizers will survive in sluices, if they do so in non-reduced embedded wh-questions. Indeed, if sluicing results from deletion of the sister of the projection that hosts wh-phrases, anything that is above this projection is expected to survive. Therefore, in order to argue for this kind of analysis in a given language, it needs to be checked whether non-reduced embedded questions and sluices behave in the same manner with respect to complementizer placement.

In Georgian, as we have seen in section 2.3, example 13, embedded wh-questions allow the interrogative complementizer *tu*. The behavior of sluices turns out to be identical: Wh-phrases in a sluice are compatible with *tu*, the interrogative complementizer, but not with *rom*, a declarative complementizer, entirely analogously with non-reduced embedded wh-questions.

- (38) a. Argument
 manana-m gušin rayac(a) iq'ida,
 Manana-ERG yesterday something.NOM s/he.bought
 magram ar vici (tu/*rom) ra
 but NEG I.know Q/*COMP what.NOM
 'Manana bought something yesterday, but I don't know what'
- b. Adjunct
 šen sadyac(a) dat'ove gasayeb-i, magram
 you somewhere you.left key-NOM but
 (me) ar daminaxavs (tu/*rom) sad
 I NEG I.saw Q.COMP/COMP where
 'You've left the key somewhere, but I haven't seen where.'
- Multiple wh
 gušin viyac(a) viyaca-s=tan cek'vavda,
 yesterday someone.NOM someone-DAT=with s/he.danced
 magram ar maxsovs (tu/*rom) vin vis=tan
 but NEG I.remember Q.COMP/COMP who.NOM who.DAT=with
 'Yesterday someone danced with someone, but I don't remember who (danced) with who.'

In the case of sluicing with multiple wh-phrases, *tu* can only precede the first of them, no matter whether they are coordinated or not¹¹.

- (39) a. am zapxul-s q'vela sadyac(a) midis,
 this.OBL summer-DAT all somewhere goes
 magram ar vici (tu) vin (*tu) sad
 but NEG I.know Q who Q where
 ‘This summer, everyone is going somewhere, but I don’t know
 who (is going) where.’
- b. rodisyac(a) rat’omyac(a) gamravleb-is t’abul-s
 some.time for.some.reason multiplication-GEN table-GEN
 visc’avle magram ar maxsovs (tu) rodis da
 I.memorized but NEG I.remember Q when and
 (*tu) rat’om
 Q why
 ‘Sometime I learned the multiplication table for some reason, but I forget when
 (and) why.’

In “extended sluices” the complementizer can only precede the wh-phrase. This serves as evidence that the material preceding the wh-phrases is not lower than in SpecCP, or occupies a position in the TopP that is located above the CP.

- (40) a. guram-i gušin rezo-m cema.
 Guram-NOM yesterday Rezo-ERG s/he.beat.up
 ar vici (*tu) dyes (?tu) vin
 NEG I.know COMP today COMP who
 ‘Yesterday, Rezo beat up Guram. I don’t know who (beat him up) today.’
- b. guram-i rezo-m cema.
 Guram-NOM Rezo-ERG s/he.beat.up
 ar vici (*tu) zurabi (?tu) vin
 NEG I.know COMP today COMP who
 ‘Rezo beat up Guram. I don’t know who (beat up) Zurab.’

Judgments about the possibility of the complementizer vary in the case of embedded sluicing.

- (41) rezo-m šeč’ama rayac(a) da večvob
 Rezo-ERG s/he.ate something and I.suspect
 rusudan-ma icis (*?tu) ra
 Rusudan-ERG knows COMP what.NOM
 ‘Rezo ate something and I suspect that Rusudan knows what.’

8. Is Georgian sluicing a reduced copular construction?

Before attempting a deletion-based analysis, we need to check whether the hidden structure in a sluice is plausibly identical to that in the antecedent, or has a different provenance -- the class of phenomena called NON-ISOMORPHIC SLUICING in Vicente (2014). In this section, I provide evidence against what seems to be the only possible alternative source, namely, a copular clause with omitted copula.

¹¹ This might serve as an argument against treating questions with coordinated wh-phrases as instances of CP-level coordination, cf. the discussion in Gribanova (2009) for Russian.

Given that the copula is not reconstructible in many of the contexts, the sluicing-like construction does not seem to be derivationally related to a cleft. Furthermore, cleft-like constructions do not seem to be attested elsewhere in Standard Georgian¹².

- (42) manana-s viyac-is ešinia magram ar vici visi(*=a)
 Manana-DAT someone-GEN fears but NEG I.know who.GEN=be.3SG.PRS
 ‘Manana fears somebody, but I don’t know who.’

The sentence in 43 illustrates the same point in an embedded context.

- (43) a. rezo-m še-č’ama rayac(a) da
 Rezo-ERG PRV-ate something.NOM and
 večvob **rom** rusudan-ma icis ra(*=a).
 I.suspect COMP Rusudan-ERG knows what=be.3SG.PRS
 ‘Rezo ate something and I suspect that Rusudan knows what.’
 b. šen sadyac(a) dadevi gasayeb-i
 you.SG somewhere you.put key-NOM
 vpikrob [rom manana-m dainaxa sad (*iq’o es)]
 I.think COMP Manan-ERG s/he.saw where was it
 ‘You put the keys somewhere, and I think that Manana saw where.’

When the copula is judged possible, the wh-phrase in the sluice must always stand in the nominative rather than match the antecedent in case, compare the (highly artificial) embedded clause in 44 with the copula-less sluice in 42.

- (44) manana-s viyac-is ešinia
 Manana-DAT someone-GEN fears
 magram ar vici is vin aris
 but NEG I.know it.NOM who.NOM is
 ‘Manana fears somebody, but I don’t know who this is.’

Consequently, it is impossible to assume that the sluicing-like construction is derived by copula drop -- we need to assume a syntactic structure closely resembling that of the antecedent.

9. Can Georgian sluicing be reduced to stripping?

Classical sluicing is assumed to be a *sui generis* phenomenon. For the sake of theoretical elegance, however, it would be distinctly preferable to as much as possible reduce the taxonomic variety of ellipsis types. A natural candidate for unification with sluicing would be STRIPPING, the phenomenon first brought to the attention of syntacticians by Ross (1967) and defined by Hankamer & Sag (1976) as “a rule that deletes everything in a clause under identity with corresponding parts of the preceding clause, except for one constituent, (and sometimes a clause-initial adverb or negative).” Sentences in 45, taken from Lobeck (1995: 27), illustrate stripping in English.

- (45) a. Jane gave presents to John, but not to Geoff.
 b. Jane loves to study rocks, and geography too.
 c. Jane loves to study rocks, and John too.

¹² The situation in Georgian dialects, especially those spoken in the west of the country, might well be different.

Stripping exists in Georgian, 46a, and, as we will see below, it even shares many properties with sluicing, unlike in English. However, there is at least one reason to assume that they are two separate phenomena: namely, unlike sluicing, stripping in Georgian cannot go backwards.

- (46) a. rezo yvino-s svams da guram-i=c agretve
 Rezo.NOM wine-DAT drinks and Guram-NOM=too also
 ‘Rezo is drinking wine and Guram too.’
 b. *guram-i=c agretve da rezo yvino-s svams
 Guram-NOM=too also and Rezo.NOM wine-DAT drinks
 *‘Guram too and Rezo drinks wine.’

On the other hand, unlike in English, embedded stripping is possible in Georgian.

- (47) rezo yvino-s svams da vpikrob
 Rezo.NOM wine-DAT drinks and I.think
 [rom guram-i=c ?(agretve)]/ ^{ok}[rom agretve guram-i=c]
 COMP Guram-NOM=too also COMP also Guram-NOM=too
 ‘Rezo drinks/is drinking wine and I think that Guram (does so) too.’

Furthermore, like sluicing, embedded stripping escapes island constraints.

- (48) Coordinate Structure Constraint
 manana-m gaak’eta yomi da k’idev rayac(a)
 Manana-ERG s/he.made ghomi and additionally something
 vpikrob (rom) baže
 I.think COMP bazhe
 ‘Manana cooked *ghomi* and something else. I think (that she cooked) *bazhe*¹³.’

- (49) Complex NP constraint
 a. zurab-ma moit’ana ambav-i rom sopel=ši
 Zurab-ERG s/he.brought news-NOM COMP village=in
 viyac(a) dak’orcinda vpikrob (rom) guram-i
 someone s/he.got.married I.think Guram-NOM
 ‘Zurab brought the news that someone in the village is getting married. I think (that) Guram.’
 b. zurabi modis cxen-it romel-i=c sxva-s ek’utvnis
 Zurab goes horse-INS which-NOM=REL other-DAT belongs
 vpikrob rom rezo-s
 I.think COMP rezo-DAT
 ‘Zurab is riding a horse that belongs to somebody else. I think that (it belongs to) Rezo.’

- (50) Adjunct Island
 zurab-i saxli=dan viyac-is šemdeg gamovida
 Zurab-NOM house=from someone-GEN after s/he.left
 magram ar var darc’munbul-i rom guram-is šemdeg
 but NEG I.am sure-NOM COMP Guram-GEN after
 ‘Zurab left the house after someone, but I’m not sure that (he left) after Guram.’

¹³ *Ghomi* is a kind of porridge of corn (called *grits* in the Southern US); *bazhe* is a walnut sauce.

To recapitulate, although stripping shares a number of properties with sluicing in Georgian, it still significantly differs from sluicing in that the ellipsis site may not precede its antecedent under stripping.

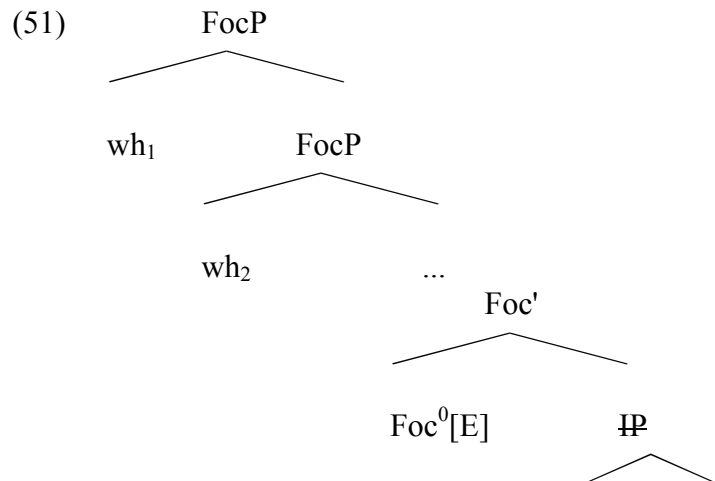
10. Towards an analysis

In the course of preceding sections, we have collected enough data to now venture upon an analysis of sluicing Georgian. The analysis I am going to propose is essentially a slight modification of the approach developed in Merchant (2001).

10.1 An overview

The preponderance of evidence suggests that, in Georgian, the sluicing-like construction comes about as the result of ellipsis in embedded wh-questions whose structure is maximally close to that of the antecedents, that is, Georgian sluicing is an instance of isomorphic sluicing in the sense of Vicente (2014). Accordingly, an analysis of sluicing in Georgian hinges upon an analysis of matrix and embedded wh-questions.

Potential analyses of displacement, to use a non-committal term, of wh-phrases in questions include movement to specifiers of some projection, formation of a cleft or pseudo-cleft, or scrambling, see a discussion in Potsdam & Polinsky (2011). A cleft-like or scrambling analysis does not appear to be applicable to Georgian. Alternative mechanisms of displacement of wh-phrases, clefting or scrambling, do not seem operative in Georgian. As we have seen in Section 8, cleft-like constructions are not attested in Standard Georgian. Furthermore, the fact that all wh-phrases must land in the preverbal position, as was discussed in Section 2.2, testifies against the scrambling scenario: scrambled items are typically much less constrained in their placement. Accordingly, we need to establish the nature of the head to whose specifiers the wh-phrases are moved and of the feature that drives their movement. All the facts we have seen so far agree with the idea that wh-phrases in Georgian move into the specifiers of the FocP. Accordingly, I will take up the line of reasoning developed in Toosarvandani (2008) and Van Craenebroek & Lipták (2013) and assume that movement indeed proceeds into SpecFocP and that it is the sister of the phonologically null Foc^0 that gets deleted. The feature [E] that licenses deletion is hosted by Foc^0 , as in the proposals cited above. For expository purposes I use the IP label to denote the complement of the FocP. We will discuss the nature of this projection in more detail later in this section.



10.2 The structure of matrix wh-questions

The word order in Georgian wh-questions is subject to the following rigid constraints: first, only a negative marker may intervene between the wh-phrases and the verb, and, second, a focused XP may not precede the cluster of wh-phrases.

To proceed with the analysis based on movement into multiple specifiers of the FocP we need to rule out its possible contenders, specifically

- (i) adjunction to a certain projection (plausibly the TP);
- (ii) movement of one wh-phrase into the SpecCP followed by focusing of the rest of wh-phrases; and
- (iii) movement of all wh-phrases into multiple specifiers of the SpecCP.

I use here a more fine-grained classification than that in Richards (2001): in his approach, movement into multiple specifiers of the FocP and adjunction to the TP will be subsumed under the term IP-absorption.

To exclude scenario (i), observe that, unlike a movement-to-multiple-specifiers analysis, multiple adjunction does not require the cluster of wh-phrases to behave as a single constituent. In particular, adjunction to the TP predicts that wh-phrases will be able to be interspersed by some other types of TP adjuncts, e.g. time adverbials, a prediction that is not borne out. Additionally, the evidence that the multiple wh-phrases indeed occupy multiple specifiers of the same head (or, which is essentially equivalent, are all adjoined to a single specifier, as per the proposal of Rudin (1988: 480) for Bulgarian and Romanian, or are "tucked in", according to Richards' (2001) approach) comes from the fact that parentheticals cannot intervene between them, 52a, but rather can only precede the wh-phrases or follow the verb, 52b-c.

- (52)
- | | | | | | |
|----|---|-------------|-------------|----------|-------------|
| a. | *vin | [šen-i | azr-it] | ra | iq'ida? |
| | who(ERG) | your-NOM | opinion-INS | what.NOM | bought |
| | 'Who by your opinion bought what?' (intended meaning) | | | | |
| b. | [šen-i | azr-it] | vin | ra | iq'ida? |
| | your-NOM | opinion-INS | who(ERG) | what.NOM | bought |
| c. | vin | ra | iq'ida | [šen-i | azr-it] ? |
| | who(ERG) | what.NOM | bought | your-NOM | opinion-INS |
- Idem*

Another test used by Rudin (1988) to distinguish between the behavior of multiple wh-phrases as a single constituent or as multiple constituents has to do with placement of second position

clitics. Even abstracting away from potential conceptual problems -- 2P clitic placement could be a post-syntactic phenomenon that is not sensitive to the syntactic constituency -- this test is inapplicable in Georgian, because 2P clitics compatible with wh-questions do not exist in this language.

The analysis listed under (ii), the one that assumes that one, and only one, of wh-phrases moves into SpecCP (driven by [+wh]-feature rather than by a focus feature) predicts that, in a language with focus fronting, as Georgian is, focus-fronted items other than wh-phrases may occur in wh-questions with only one wh-phrase. This is not the case in Georgian. In 53, the DP *gela-m=ac k'i* ‘even Gela’ is associated with ‘even¹⁴’ and therefore focused. It cannot be placed to the left of the wh-phrase, as 53a shows, but when this DP is placed in a postverbal position, the ungrammaticality disappears. The same contrast holds in 53c-d: the focused phrase that is associated with *mxolod* ‘only’ may only follow the wh-phrase. This observation agrees with findings of Skopeteas & Fanselow (2009) who argue for the existence of preverbal and postverbal focus positions in Georgian.

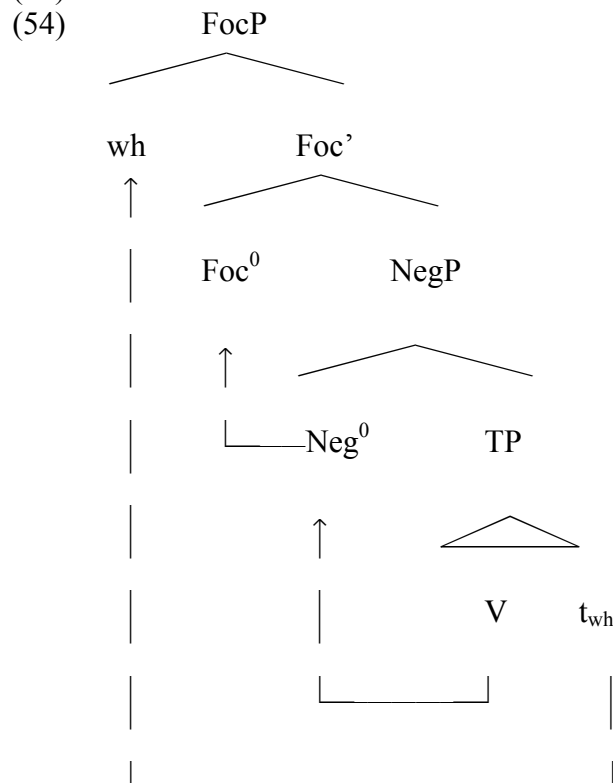
- (53) a. ***gela-m=ac k'i** romel-i c'igni c'aik'itxa?
 Gela-ERG=too PRT which-NOM book-NOM read
 b. romel-i c'igni c'aik'itxa **gela-m=ac k'i?**
 which-NOM book-NOM read Gela-ERG=too PRT
 ‘Which book did even Gela read?’
 c. ***mxolod ert-i c'ign-i** vis misca
 only one-NOM book-NOM who.DAT he.gave
 gela-m?
 Gela-ERG
 ‘Who did Gela give only one book to?’
 d. vis misca **mxolod ert-i c'ign-i**
 who.DAT s/he.gave only one-NOM book-NOM
 gela-m?
 Gela-ERG
 ‘Who did Gela give only one book to?’

We may conclude accordingly that the cluster of wh-phrases indeed occupies the multiple specifiers of a single head. What remains to rule out is the possibility that this head is C⁰ and what we are dealing with is wh-movement of the usual kind, slightly obscured by the presence of the topic layer above the CP. The evidence for not taking the SpecCP as the locus of wh-movement in Georgian comes from the structure of embedded wh-questions: as we have seen in section 2.3, the interrogative complementizer *tu* may only precede wh-phrases, as illustrated by the sentences in 13. Had they been situated in its specifier(s), under the standard assumptions about linearization, we would expect the complementizer to follow the wh-cluster.

To account for the obligatory multiple wh-movement in Georgian, it is reasonable to assume that the movement proceeds into multiple specifiers of the FocP. Specifically, I advance the following proposal. In non-embedded wh-questions, wh-phrases move to the specifiers of the same FocP projection, whereas the material that precedes them topicalizes into Spec TopP. To derive the adjacency requirement between wh-phrases, negation, and the verb, I propose that the

¹⁴ Strictly speaking, Georgian lacks a direct translational equivalent of ‘even’, and in colloquial speech the Russian loanword *daže* is usually used for this purpose. The particle *k'i* has wider uses, see a discussion in Rostovtsev-Popiel (2012).

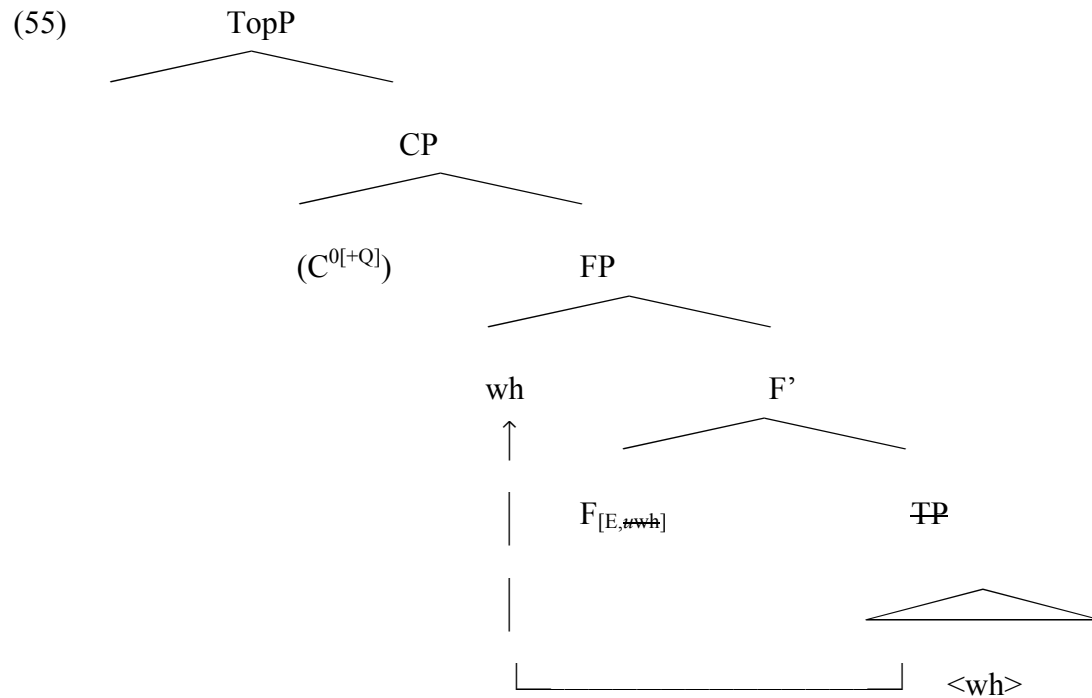
verb head-moves first, into Neg^0 , and afterwards, into Foc^0 . On its way from V^0 to Neg the verb probably head-moves through T^0 and Asp^0 , but for the sake of simplicity I do not show this in (54).



One may eventually need to posit several Top layers in the spirit of Rizzi (1997) and the subsequent work, but I leave this issue for further research. The lack of superiority effects, as has been illustrated in 7 in section 2.2, can be attributed to unrestricted scrambling between specifiers of a single head. The fact that some speakers of Georgian do indeed have superiority constraints in their grammar (as the consultants of Harris (1981) and Amirdze (2006) did) can be explained by the inter-speaker variation in intraspecifier scrambling.

10.3 Embedded questions and sluicing

Now, as far as sluicing is concerned, Georgian facts are compatible with the clausal architecture of the embedded clause as depicted in 55. Modulo the admittedly delicate issue of configurationality in Georgian, this essentially agrees with the structure proposed in Wier (2014: 49).

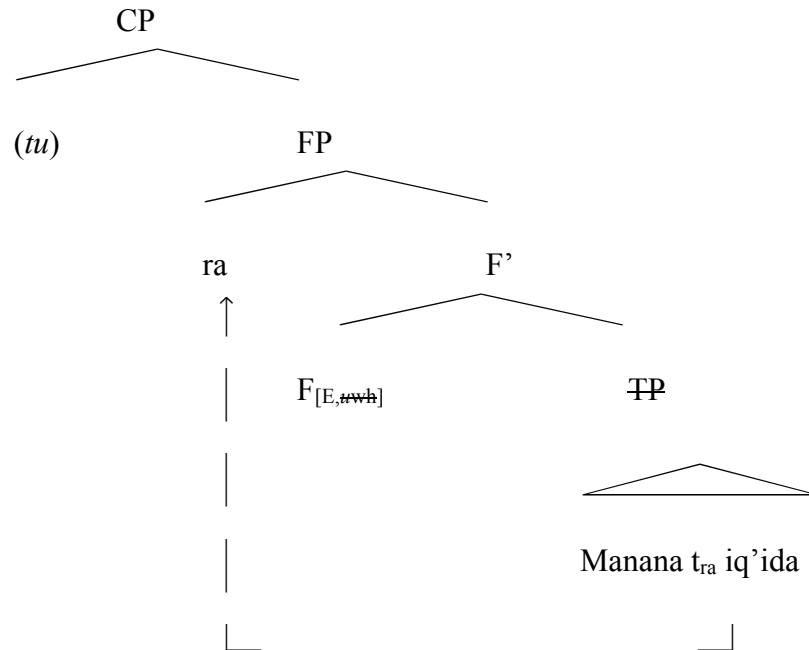


Consider, for instance, the derivation of the sentence in 56.

- (56) manana-m gušin rayac(a) iq'ida
 Manana-ERG yesterday something.NOM s/he.bought
 magram ar vici (tu) ra
 but NEG I.know COMP what.NOM
 'Manana bought something yesterday, but I don't know what'

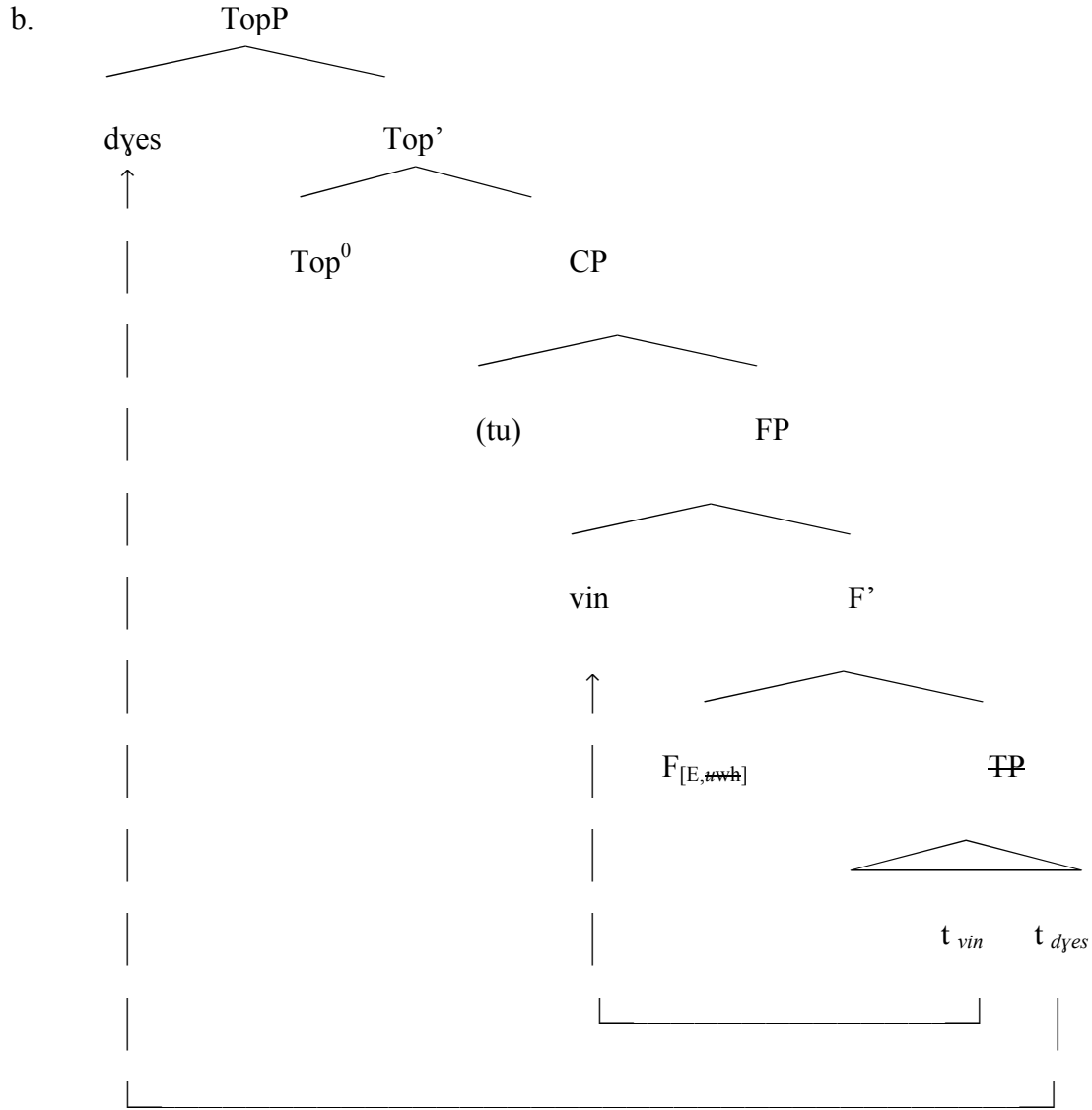
Here, the wh-phrase *ra* raises into Spec FocP, whereas Spec TopP remains empty (or, alternatively, is not merged at all).

(57)



A structure with a high TopP provides us with a natural way to derive “extended sluices” as well. For instance, to derive the sentence in 58, we need to assume that, alongside with the movement of the wh-phrase into Spec FocP, the adverb topicalizes.

- (58) a. guram-i gušin rezo-m cema.
Guram-NOM yesterday Rezo-ERG s/he.beat.up
ar vici dyes (tu) vin
NEG I.know today COMP who
‘Yesterday, Rezo beat up Guram. I don’t know who (beat him up) today.’



10.4 Remaining issues

Admittedly, it remains unclear why the complementizer *tu* cannot occupy the clause-initial position in embedded polar questions, as illustrated in 59.

- (59) ar vici (*tu) ciq'vebi tu k'argad daprinaven
 NEG I.know COMP squirrels COMP well they.would.fly
 'I don't know whether squirrels fly well.'

A radical move would be to assume that we deal here with two homonymous complementizers, one for embedded Y/N questions and one for embedded *wh*-questions. Accordingly, in this case we can expect them to exhibit different behavior. Given that we seem to need to posit separate lexical items for *tu* 'if'¹⁵ and *tu* 'or' in interrogatives anyway, and that the complementizer is

¹⁵ In Georgian statements and interrogatives, two different lexical items for 'or' are used, compare the sentences in (ia) and (ib). The interrogative 'or', *tu*, is homophonous with the interrogative complementizer, as illustrated in (i b).

obligatory in Y/N questions, while it is optional in wh-questions, as has been illustrated in 13, this move is not completely unwarranted, although one would like to keep the number of homonyms as low as possible¹⁶. I leave this issue for further research.

To conclude this section, it is perhaps worth remarking that the Georgian facts appear to be essentially parallel to those described for Hungarian in van Craenenbroeck, Lipták (2008), modulo the fact that, unlike in Hungarian, topicalized elements in Georgian appear higher than in C.

11. Embedded wh-questions and sluicing in Svan

Unlike Georgian, Svan syntax has not been addressed in theoretical literature so far. Descriptively, the syntax of Svan looks at a first approximation fairly similar to the syntax of Georgian. That pertains to wh-questions and finite subordinated clauses as well. However, some facts indicate that the two languages significantly differ structurally. My data come from Upper and Lower Bal Svan, the facts may well be somewhat different in the dialects of Lower Svaneti: Lentekhian, Lakhshian, and Cholurian.

11.1 Wh-questions in Svan

Like Georgian, Svan exhibits obligatory wh-movement into the preverbal position, a fact already observed by Tuite (1997). Analogously to Georgian, the wh-phrases must be immediately adjacent to the verb in a question, compare the grammatical sentences in 60a and 60c with their ungrammatical counterparts in 60b and 60d. The only possible interveners are neg-phrases, see 61 below.

- (60)
- | | | | |
|----|--------------------------------------|------------|------------|
| a. | nato-s | jær | laxk'axæn? |
| | Nato-DAT | who | kissed |
| b. | *jær nato-s | laxk'axæn? | |
| | who Nato-DAT | kissed | |
| | 'Who kissed Nato?' UB | | |
| c. | šoma esyri kalæk-te? | | |
| | when you.go city-ALL | | |
| d. | *šoma kalæk=te esyri? | | |
| | when city-ALL you.go | | |
| | 'When are you going to the city?' UB | | |

Completely parallel to Georgian, negative markers, when present in a sentence, obligatorily intervene between the verb and the wh-phrases, 61a. Unlike in Georgian, however, negative

-
- (i)
- | | | | | | |
|----|--|-----------------|---------------|----------|------------|
| a. | A statement | | | | |
| | xe-ze | ciq'v-s | an/*tu | tevz-s | vnaxav |
| | tree-on | squirrel-DAT | or | fish-DAT | I.will.see |
| | 'I will see a squirrel or a fish in the tree.' | | | | |
| b. | A question | | | | |
| | es | ciq'v-i=a | tu/*an | tevz-i? | |
| | this | squirrel-NOM=is | or | fish-NOM | |
| | 'Is this a squirrel or a fish?' | | | | |

¹⁶ A possible direction for unification of different uses of complementizer-like and conjunction-like uses of 'or'-s cross-linguistically is outlined in Szabolcsi (2013).

indefinites may optionally intervene between the verb and the wh-phrases in a sentence, see the position of *dær-s* ‘nobody-DAT’ in 61b, of *dær-s mamgweš* nobody-DAT ‘nothing’ in 61c, and of *dem* ‘never’ in 61d.

- (61)
- | | | | | | |
|----|--|-----------------|----------------|------------|----------|
| a. | jær-d | mam/desa | laxwem | dær-s | mamgweš? |
| | who-ERG | NEG | gave | nobody-DAT | nothing |
| b. | jær-d | dær-s | laxwem | mamgweš? | |
| | who-ERG | nobody-DAT | gave | nothing | |
| c. | jær-d | dær-s | mamgweš | laxwem? | |
| | who-ERG | nobody-DAT | nothing | gives | |
| | ‘Who didn’t give anything to anyone?’ UB | | | | |
| d. | jær | dem | izbi | viskws? | |
| | who | never | eats | apple.DAT? | |
| | ‘Who never eats apples?’ UB | | | | |

Otherwise, the word order in wh-questions is free: all the three sentences in 62 are fully acceptable.

- (62)
- | | | | | |
|----|---------------------------------|---------|----------|---------|
| a. | jærd | laxwem | gela-s | jæræy? |
| | who.ERG | gave | Gela-DAT | weapon |
| b. | gela-s | jæræy | jærd | laxwem? |
| | Gela-DAT | weapon | who.ERG | gave |
| | ‘Who gave a weapon to Gela?’ UB | | | |
| c. | gela-s | jærd | laxwe:m | jæræy? |
| | Gela-DAT | who.ERG | gave | weapon |
| | ‘Who gave a weapon to Gela?’ UB | | | |

In multiple wh-questions, all wh-phrases are required to move into the preverbal position. As in Georgian, for the majority of Svan speakers superiority effects are non-existent, nor does animacy play a role in the ordering of wh-phrases, 63.

- (63)
- | | | | |
|----|-----------------------|---------|---------|
| a. | jæs | mæj | xaxəra? |
| | who.DAT | what | annoys |
| b. | mæj | jæs | xaxəra? |
| | what | who.DAT | annoys |
| | ‘What annoys who?’ UB | | |
| c. | jær-d | mæj | anq’id? |
| | who-ERG | what | bought |
| d. | mæj | jær-d | anq’id? |
| | what | who-ERG | bought |
| | ‘Who bought what?’ UB | | |

11.2 Clause embedding

Within the Georgian descriptive tradition, clause embedding in Svan was addressed in Abesadze (1960). In Svan finite embedded clauses, interrogative and declarative alike, a wide-purpose complementizer *er(e)* is used. At present, I do not know what governs the disappearance of the final vowel of this complementizer.

- (64) a. gela-s xak'w ere nino anqes.
 Gela-DAT wants COMP Nino arrives
 'Gela wants Nino to arrive.' UB
- b. gela ačæd mayazija=te er oxq'idæn bordžom
 Gela went shop=all COMP buys Borjomi
 'Gela went to a shop to buy (some) Borjomi¹⁷.' UB

The complementizer may appear anywhere between the left edge and the verb, but not to the right of the verb.

- (65) mi ču=mixa <ere> dæwit <ere> esyri <*ere>šwan-te
 I PRV¹⁸=I.know COMP David goes Svaneti-ALL
 'I know that David is going to Svaneti.' UB

11.3 Embedded questions in Svan

In embedded wh-questions the use of this complementizer is optional. The same adjacency requirements as in matrix wh-questions need to be satisfied between the wh-phrases and the verb.

- (66) a. dæs xoxa, [(ere) dec imya=**do** li jirži]
 nobody.DAT knows COMP sky why=EMB is blue
 dæs xoxa, [(ere) imya=**do** li dec jirži]
 nobody.DAT knows COMP why=EMB is sky blue
 'No one knows why sky is blue.' UB
- b. gela-s ču=xoxa, [ere šoma=**do** ænqdeni nino]
 Gela-DAT PRV=knows COMP when=EMB arrives Nino
 'Gela knows when Nino arrives.' UB

Unlike in Georgian, embedded wh-questions in Upper and Lower Bal Svan carry overt morphological marking, the enclitic =*do*. No other contexts have been discovered so far where this particle would be used¹⁹.

- (67) a. mam mixa manana-d mæj=**do** anq'id
 NEG I.know Manana-ERG what=EMB bought
 'I don't know what Manana bought.' UB
- b. mi ču=mixa dæwit šoma=**do** yəri šwæn=te.
 I PRV=I.know David when=EMB goes Svaneti=to
 'I know when David is going to Svaneti.' LB

Only one copy of =*do* may be present in a clause, but it can encliticize to any of the wh-phrases. This supports the idea to treat =*do* as a clitic rather than as an affix.

¹⁷ A brand of mineral water.

¹⁸ Rostovtsev-Popiel (2012) argues that *ču* here (and in 66b) has to be analyzed as an assertion-marking particle rather than as a preverb.

¹⁹ I thank Medea Saghlani for a discussion of this point.

- (68) ervale-d mo:le adkuču:re mare mam mixa ...
 someone-ERG something broke but NEG I.know
 a. jærd mæj=**do** adkuču:re
 who.ERG what=EMB broke
 b. jærd=**do** mæj adkuču:re
 who.ERG=EMB what broke
 c. *jærd=**do** mæj=**do** adkuču:re
 who.ERG=EMB what=EMB broke
 ‘Someone broke something, but I don’t know who (broke) what.’ UB

11.4 Sluicing in Svan

A sluicing-like construction is available in Svan. The marker =*do* is still obligatory in sluices.

- (69) manana-d la:t mo:le anq’id
 Manana-ERG yesterday something bought
 mare mam mixa mæj=do
 but NEG I.know what=EMB
 ‘Manana bought something yesterday, but I don’t know what.’ UB

Multiple wh-phrases are grammatical in sluices.

- (70) a. erved mo:le adkuču:re
 someone something broke
 mare mam mixa jærd mæj=do
 but NEG I.know who.ERG what=EMB
 ‘Somebody broke something, but I don’t know who (broke) what. UB
 b. al lüp-s mæg imwala=te esyri,
 this summer-DAT all somewhere=ALL goes
 mare mam mixa im=te=do jær
 but NEG I.know where=ALL=EMB who
 ‘This summer everyone goes somewhere, but I don’t know
 who goes where.’ UB

The sluice may precede its antecedent.

- (71) a. mam mixa im=do mare rezo imwa:le izbi
 NEG I.know what=EMB but Rezo something eats
 I don’t know what, but Rezo is eating something. UB
 b. jærd=do mam mixa mare
 who.ERG=EMBNEG I.know but
 erwa:led nærxi ant’wa:re
 someone.ERG light turned.on
 ‘Who, I don’t know, but someone turned on the light.’ UB

Case-matching requirements are fulfilled as well. Additionally, 72 illustrates that, unlike in unreduced embedded questions, the complementizer is ungrammatical in sluices.

- (72) mišgwe žey imwanoš adc'əmlawæn
 our dog something.INST got.poisoned
 mare (*ere) imnoš=do mam mixa
 but COMP what.INST=EMB NEG I.know
 'Our dog got poisoned with something, but we don't understand what with.' UB

Similarly to Georgian, Svan wh-questions obey all the standard island constraints. However, parallel sluices are grammatical.

- (73) a. gela ačæd jerwa:le dinæ: sačkwæri laq'idte
 Gela left some girl gift to.buy
 mare mi mam mixa iša=do
 but I NEG I.know which=EMB
 'Gela left to buy a gift for a girl, but I don't know which girl.' UB
 b. mi xwec'd ma:res xedwæjd mo:le ašxwin
 I I.saw man.DAT who.REL.ERG something s/he.hid
 mare mi deš xwec'd mæj=do
 but I NEG.MOD I.saw what=EMB
 'I saw a man who was hiding something, but I couldn't see what.' UB

Unlike Standard Georgian, Svan allows clefts in questions.

- (74) a. jær li edža ere gærgli=gar?
 who be.PRS.3SG that COMP talks=only
 'Who only talks?' UB
 b. jær li edža ere gelas bəgid xalæt'?
 who be.PRS.3SG that COMP Gela-DAT strong loves
 'Who does Gela very much love?' UB

Nevertheless, the copula is not recoverable in sluices.

- (75) gela-d imwalawš adyape st'ol
 Gela-ERG something.INS painted table
 mare mi mam mixa imnoš=do (*li)
 but I NEG I.know what.INS=EMB be.PRS.3SG
 'Gela painted the table with something, but I don't know what with.' UB

11.5 Differences between Georgian and Svan sluicing

To recapitulate, the differences between the Svan and Georgian facts are as follows: in Svan wh-questions, negative indefinites may intervene between the wh-phrases and the verb; Svan has a dedicated marker =do in embedded wh-questions, which is retained in sluices; Svan does not allow the default complementizer in sluices.

The import of these differences for a theoretical analysis is that, unlike in Georgian, we cannot assume an identical underlying structure for sluices and unreduced embedded questions in Svan. Had they been identical, the complementizer *er(e)*, which obligatorily precedes wh-phrases when used in embedded wh-questions, and accordingly is situated higher in the clause, would have survived the deletion. Additionally, the fact that any neg-items may intervene between wh-phrases and verbs indicates that the structure of matrix wh-questions in Svan is different as well:

wh-movement targets a different projection. I leave an appropriate analysis of Svan clause structure for further research.

12. Conclusion

The Georgian sluicing-like construction does not have an obvious alternative origin, such as stripping or a reduced cleft. It fits with the generalized sluicing pattern, as advanced in Toosarvandani (2008) for Persian and van Craenenbroeck, Lipták (2006, 2013) for Hungarian: wh-phrases move into the specifiers of a projection that is situated above the TP but below the CP, specifically, into the FocP. The head of this projection hosts the feature that licenses the deletion of the complement. The Svan counterpart of this construction also passes all the standard tests for sluicing, but the analysis must certainly be different from that of Georgian.

References

- Abesadze, Nia. 1960. Hip'ot'aksis c'evr-k'avširebi svanurši. [Hypotactic conjunctions in Svan.] Tbilisi saxelmc'ipo universit'et'is šromebi. 93: 105-150.
- Adams, Pern Wang and Tomioka, Satoshi. 2012. Sluicing in Mandarin Chinese: An instance of pseudo-sluicing. In Merchant & Simpson (2012) 219-247.
- Amiridze, Nino. 2006. Reflexivization Strategies in Georgian. Utrecht University PhD dissertation.
- Apridonidze, Shukia. 1986. *sit'q'vatganlageba axal kartulši*. [Word order in Modern Georgian.] Tbilisi: Mecniereba.
- Barros, Matthew; Elliott, Patrick D., and Thoms, Gary. 2014. There is no island repair. *lingbuzz*/002100.
- Boeder, Winfried. 2005. The South Caucasian Languages. *Lingua* 115. 5-89.
- Bošković, Željko. 2009. More on the no-DP analysis of article-less languages. *Studia Linguistica* 63: 187-203
- Craenenbroek, Jeroen van. 2012. How do you sluice when there is more than one CP? In Merchant & Simpson (2012), 40-67.
- Craenenbroek, Jeroen van; Lipták, Aniko. 2006. The cross-linguistic syntax of sluicing: evidence from Hungarian relatives. *Syntax* 9: 248-274.
- Craenenbroek, Jeroen van; Lipták, Aniko. 2013. What Sluicing Can do, What it Can't, and in Which Language: on the cross-linguistic syntax of ellipsis. In: Cheng L., Corver N. (Eds.), *Diagnosing syntax*. Oxford: Oxford University Press, 502-536.
- Erschler, David. 2012. From preverbal focus to preverbal "left periphery": The Ossetic clause architecture in areal and diachronic perspective. *Lingua* 122: 673-699.
- Featherston, Sam. 2005. Magnitude estimation and what it can do for your syntax: some wh-constraints in German. *Lingua* 115: 1525-1550.
- Foley, Steven. 2013. The Syntax of Georgian Relative Clauses. NYU Senior Honors Thesis.
- Grewendorf, Günther. 2005. The Asymmetry of Short and Long Wh-Extraction in German. *Recherches linguistiques de Vincennes* 33: 35-54.
- Gribanova, Vera. 2009. Structural adjacency and the typology of interrogative interpretations. *Linguistic Inquiry* 40(1), 133-154.
- Hankamer, Jorge, and Sag, Ivan. 1976. Deep and Surface Anaphora. *Linguistic Inquiry* 7: 391-426.
- Harris, Alice. 1981. *Georgian Syntax*. Cambridge: CUP.

- Harris, Alice. 1984. Georgian. In W. S. Chisholm, ed. *Interrogativity: A Colloquium on the Grammar, Typology and Pragmatics of Questions in Seven Diverse Languages*, pp. 63–112. Amsterdam/Philadelphia: Benjamins.
- Hewitt, George. 1995. *Georgian. A Structural Reference Grammar*. Amsterdam: Benjamins.
- Kahnemuyipour, Arsalan. 2001. On Wh-questions in Persian. *Canadian Journal of Linguistics* 46: 41–61.
- Karimi, Simin & Azita Taleghani. 2007. Wh-movement, interpretation, and optionality in Persian. In: Karimi, S., V. Samiiian, W. Wilkins (eds). *Clausal and phrasal architecture: syntactic derivation and interpretation*. John Benjamins.
- Leung, Tommi. 2014. The Preposition Stranding Generalization and Conditions on Sluicing: Evidence from Emirati Arabic. *LI* 45: 332–340.
- Lobeck, Anna. 1995. *Functional Heads, Licensing, and Identification*. Oxford: OUP.
- Marušič, Franc and Žaucer, Rok. 2013. A Note on Sluicing and Island Repair. In Steven Franks (ed.) *Annual Workshop on Formal Approaches to Slavic Linguistics, The Third Indiana Meeting 2012*, (Michigan Slavic Materials, vol. 59). Ann Arbor: Michigan Slavic Publications. 176–189.
- McGinnis, Martha, 1995. Projection and position: evidence from Georgian. In: Costa, J., Goedemans, R., van der Vijver, R. (Eds.), *Proceedings of ConSOLE IV*. HIL, Leiden, 203–220.
- McGinnis, Martha, 1997. Case and locality in L-syntax: evidence from Georgian. In: Harley, H. (Ed.), *MITWPL 32: The UPenn/MIT Roundtable on Argument Structure and Aspect*.
- Merchant, Jason. 2001. *The syntax of Silence*. Oxford: OUP.
- Merchant, Jason. 2008. Variable island repair under ellipsis. In: Johnson, Kyle. (ed.) *Topics in Ellipsis*. Cambridge: CUP. 132–153.
- Merchant, Jason and Simpson, Andrew (eds.). 2012. *Sluicing: Cross-linguistic perspectives*. Oxford: OUP.
- Nakamura, Masanori. 2012. Case morphology and island repair. In Merchant & Simpson (2012) 104–122.
- Nash-Haran, L., 1992. La catégorie AGR et l'accord en géorgien. In: *Récherches Linguistiques de Vincennes*. 21: 65–79.
- Nash, Léa. 1995. Argument Structure and Case Marking in SOV and Ergative Languages. Doctoral dissertation. University Paris VIII.
- Potsdam Eric; Polinsky Maria. 2011. Questions and word order in Polynesian. In: Moyse-Faurie, Claire and Sabel, Joachim (eds.) *Topics in Oceanic Morphosyntax*. Berlin: Mouton de Gruyter. 107–134.
- Richards, Norvin. 2001. *Movement in Language: Interactions and Architectures*. New York/Oxford: Oxford University Press.
- Rizzi, Luigi. 1997. The Fine Structure of the Left Periphery. In: Haegemann, Liliane, (ed.) *Elements of Grammar*. 281–337. Dordrecht: Kluwer.
- Rodrigues, Cilene, Nevins, Andrew, Vicente, Luis. 2009. Cleaving the Interactions between Sluicing and Preposition Stranding. In Wetzels, L., van der Weijer, J. (Eds.). *Romance Languages and Linguistic Theory 2006* (pp.175–198). Amsterdam: John Benjamins.
- Ross, John Robert. 1967. Constraints on Variables in Syntax. Doctoral dissertation, MIT.
- Ross, John Robert. 1969/2012. Guess who? In *Proceedings of the Fifth Regional Meeting of the Chicago Linguistic Society*, ed. by Robert Binnick et al., 252–286. Chicago: University of Chicago, Chicago Linguistic Society. reprinted in Merchant & Simpson (2012).
- Rostovtsev-Popiel, Alexander. 2012. Grammaticalized Affirmativity in Kartvelian. PhD Dissertation, Universität Frankfurt am Main.

- Rudin, Catherine. 1988. On Multiple Questions and Multiple WH Fronting. *NLLT* 6: 445-501.
- Sag, Ivan, Nykiel, Joanna. 2011. Remarks on Sluicing. In Müller, Stefan (ed.) Proceedings of the HPSG11 Conference. <http://csli-publications.stanford.edu/>
- Skopeteas, Stavros; Féry, Caroline; Asatiani, Rusudan. 2009. Word order and intonation in Georgian. *Lingua* 119: 102-127.
- Stjepanovic, Sandra. 2012. Two cases of violation repair under sluicing. In Merchant and Simpson (eds.) 2012. 68-82.
- Szabolcsi, Anna. 2013. Quantifier particles and compositionality. 19th Amsterdam Colloquium paper.
- Testeleets, Yakov G. 1998. Word order in Kartvelian languages. In: Anna Siewierska (ed.), *Constituent Order in the Languages of Europe*, 235–256.
- Tschenkéli, Kita. 1958. *Einführung in die Georgische Sprache*. Band 1. Theoretischer Teil. Zürich: Amiran Verlag.
- Toosarvandani, Mazyar. 2008. *Wh*-movement and the syntax of sluicing. *Journal of Linguistics* 44: 677-722.
- Tuite, Kevin. 1997. *Svan*. Munich/ Newcastle: Lincom Europa.
- Vamling, Karina. 1989. *Complementation in Georgian*. Lund: Lund University Press.
- Vicente, Luis. 2014. Sluicing and its subtypes. lingbuzz/002235.
- Wier, Thomas. 2011. Georgian Morphosyntax and Feature Hierarchies in Natural Language. University of Chicago PhD Dissertation.
- Wier, Thomas. 2014. Nonconfigurationality and argumenthood in Georgian. *Lingua* 45: 36-64.