

ON PIVOTS AND SUBJECTS IN GEORGIAN
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Abstract.

Properties of cross-clausal coreference have long been taken as criteria of grammatical relations (e.g. Chomsky 1965 and before). In this paper I will cast doubt on that proposition by identifying one language, Georgian, in which pivot phenomena are sensitive to argument structural information and not case or position or some other outward sign of grammatical status. These pivot facts will clearly distinguish two approaches to grammatical relations in LFG, Manning (1996) and Falk (forthcoming). In closing, I will speculate about the formal origin of the typology of this pivot.

1. Introduction

In this paper¹ I will be looking at questions of how different theories formalize properties of morphosyntax that traditionally go under the label of grammatical relations, specifically looking at evidence from pivot data in Georgian that would help decide whether all properties that have traditionally been assigned to ‘subjects’ can be reducible to a single theoretical construct, or may alternatively arise from completely separate processes. These issues are important, because grammatical relations having primitive status or not is one of the primary features that distinguish multistratal theories of grammar such as Minimalism and its predecessors. Thus, if evidence can be brought to bear that grammatical relations are not primitives, or are not primitives in the standard way as currently conceived, then that might cast doubt on the monostratal theories or would require rethinking their premises.

To narrow down this subject, I will be focusing on two different lexicalist attempts at accounting for the properties of pivots: that of Manning (1996) and that of Falk (1998) and Falk (to appear). Both of these theories assume monostratality, but account for the behavior of pivots in different ways, which we will shortly see. After reviewing the claims made by these theories, I will be introducing new facts from Georgian which I will claim crucially distinguish between the two, and discuss their implications for syntactic theory in general.

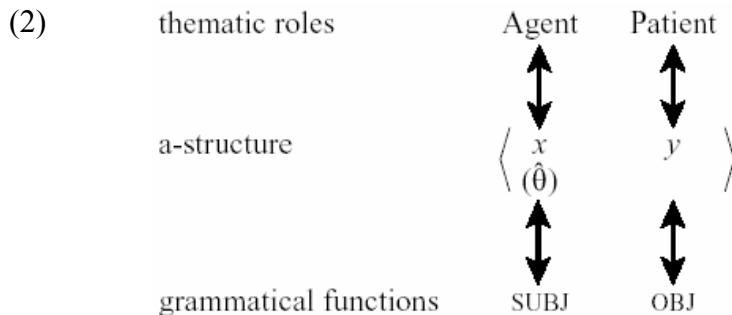
2. Manning 1996.

Because monostratal theories cannot appeal to a kind of isomorphism between syntactic structure and semantic or thematic structure, they must have recourse to something else. LFG, HPSG and some other recent theories such as that of Jackendoff assume that the properties that have been traditionally and rather theory-neutrally associated with subjects, such as control of reflexivization or control of pivots are localized in an SUBJ function, however they choose to formalize this. In LFG, these are typically captured by an alignment between two hierarchies: the *thematic hierarchy* of agents, beneficiaries, etc. and a separate *functional hierarchy* of subcategorized arguments. You can see this in (1a) and (1b).

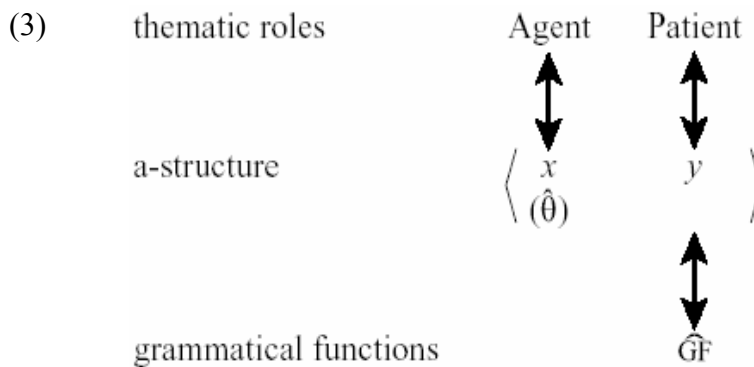
¹ I would like to thank Dr. Gela Tevzadze for his unstinting and patient help in responding to linguists’ obscure questions. I would also like to thank Ilya Yakubovich and Adam Cooper for their comments and critiques of this work. All errors are of course my own.

- (1) a. Thematic hierarchy: Agent > Beneficiary > Experiencer > Instrument > Patient, etc.
 b. Functional hierarchy: SUBJ > OBJ > OBJ_θ > OBL_θ

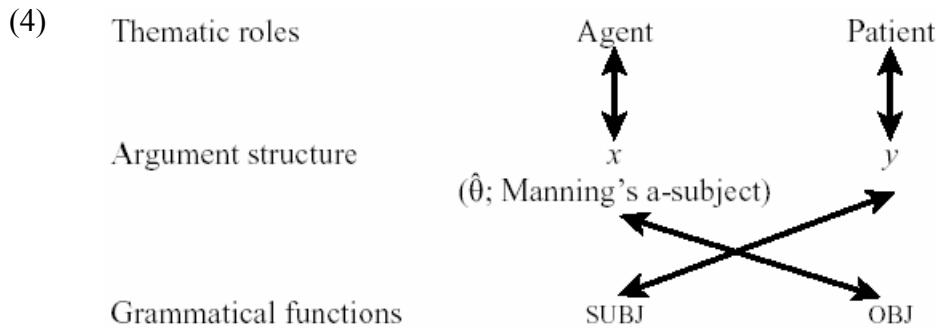
In general, these two hierarchies will always align, so that the most prominent member of the f-structure hierarchy, the SUBJ, will also be the most prominent member of the thematic hierarchy, the agent, as you can see in the diagram in (2).



And as you can see in (3), any deviation between these two must be the direct result of some lexical process that forces it, so that, for example, in the case of a passive sentence, the subject aligns with the patient because of some specific morphology motivating that.



Importantly, for Manning not all phenomena will make reference to both hierarchies. Some properties of the sentence, such as the subcategorization requirements, relativization, topicalization and pivots, will make reference only to the functional hierarchy, while binding, control and the imperative addressee will make reference only to a-structure. Manning is particularly concerned with ergativity, which he explains as a mismatch, or misalignment, between the two hierarchies, as you can see in (4), where the a-structure element assigned the agent thematic role is actually syntactically an OBJECT, while the a-structure patient is treated as the syntactic SUBJECT. This is important, because it predicts that syntactically ergative languages should separate out these two sets of phenomena and they should never mix.



What is more important for our purposes is that for any given language, whether it be a nominative-accusative one like English or a syntactically ergative one like Dyrbal or Samoan, there can only be one pivot for any interclausal patterns of coreference. As we will see, this will clearly distinguish Manning's view from that of Falk, which I will now proceed to describe, since there do exist languages with multiple pivots.

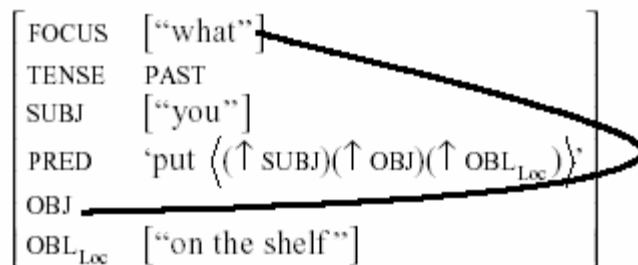
3. Falk

For Falk, in contrast, pivots are not assigned by any kind of mismatch between the separate modules, but rather arise because pivots constitute a separate entity in f-structure. In LFG, certain functions in f-structure are obligatory because of subcategorization requirements, such as SUBJs or OBJs if any. Other functions in f-structure, such as discourse notions like TOPIC and FOCUS or ADJuncts are not subcategorized, but must be licensed by the Extended Coherence² condition which functions effectively in some respects like the Projection Principle in generativist terms. Falk holds that there is another PIV function which, like TOPIC and FOCUS is an overlay function which must be anaphorically bound to some subcategorized argument.

So, for example, in a wh-construction like in (5) "What did you put on the shelf?", the wh-word is in focus, and is bound to the OBJ function in the f-structure matrix. What concerns us here is not the surface position of the wh-word, but the fact that the formal existence of the FOCUS function depends on something already licensed by the syntax.

(5) a. What did you put on the shelf?

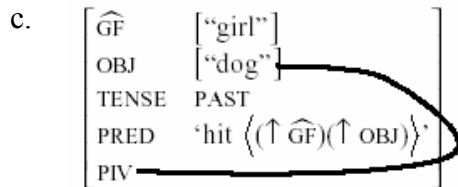
b.



² Defined thus: 'All functions in an f-structure must be incorporated into the semantics. Argument functions are subject to the Coherence condition. Overlay functions must be identified with arguments or adjuncts. Adjuncts must be in f-structures containing preds.' (Falk 2001: 64)

(6) Samoan (Falk p. 60)

- a. $(\uparrow\text{OBJ}) \Rightarrow (\uparrow\text{PIV}) = (\uparrow\text{OBJ})$
b. Sā fasi le maile e le teine.
PAST hit ART dog ERG ART girl
'The girl hit the dog.'



As you can see in (6a), Falk believes that the PIV function works similarly. In the case of this Samoan example, a lexical default rule simply identifies the PIV function with this particular function. Since not all verbs have OBJECTS, any intransitive coordinated with the transitive verb in (6b) will naturally assign the same entity to the pivot function, or otherwise there would be a feature clash and the sentence would be ruled ungrammatical. It is also important that this is defined lexically, because it predicts that languages may vary on precisely this point of how and when they assign pivots. Most languages may assign the pivot to the SUBJ function of any verb, transitive or intransitive, but other languages differ in this respect.

Falk formalizes this as the *Pivot Condition* in (7). (7) is translated roughly as follows: "A path inward through f-structure into another predicate-argument domain [that is, into a subordinate clause of some kind] or sideways into a coordinate f-structure must terminate in the function PIV."

(7) THE PIVOT CONDITION:

In a functional designation of the form $(\uparrow \dots \alpha \dots \beta)$ where:

$$\alpha \quad \text{or } (\varphi(<^* \dots \beta)) \text{ or } (\varphi(>^* \dots \beta)), \text{ if } \beta \neq \emptyset, \beta = \text{PIV}$$

(\rightarrow PRED ARG1)

4. Georgian

Now that we have looked at the formal debate within LFG circles, I would like to bring in some new Georgian data that may shed light on the debate. So, as you can see in the data in Table 1 and in (8), Georgian has a complicated split system featuring splits not just in tense but also among different classes of verbs. There are three series which indicate combinations of tense, aspect and/or modality: the present/future and aorist being more or less straightforward present and past tenses, respectively, while the perfect series is rather a kind of modal evidential form which broadly implicates but not necessarily entails an event having occurred in the past³. Importantly, the two classes of intransitive verbs, the second and the third, behave differently with respect to case and verbal agreement. The second conjugation consists of unaccusative verbs, most of whose

³ The semantics of the perfect series are complex; see Wier (ms.) for more information on the nexus of semantic and pragmatic phenomena it evinces.

members take patient subjects, while the third conjugation consists of unergative verbs most of whose members take agent subjects.

TABLE 1. Case assignment across verbal conjugations and tense-aspect series

Series / Conj.	1 st Conj.	2 nd Conj.	3 rd Conj.	4 th Conj.
<i>Present/Future</i>	Nom _{AG} – Dat _{PAT} – Dat _{GOAL}	Nom _{PAT}	Nom _{AG}	Dat _{EXP} – Nom _{PAT}
<i>Aorist</i>	Erg _{AG} -Nom _{PAT} – Dat _{GOAL}	Nom _{PAT}	Erg _{AG}	Dat _{EXP} – Nom _{PAT}
<i>Perfect Evidential</i>	Dat _{AG} – Nom _{PAT} - - <i>tvis</i> _{GOAL}	Nom _{PAT}	Dat _{AG}	Dat _{EXP} – Nom _{PAT}

- (8) a. Ivane da Ketevan-i c'eril-s Mariam-s da-u-mal-av-en
 John.NOM and Ketevan-NOM letter-DAT Mary-DAT PVB-3DAT-hide-TH-3PL
 'John and Ketevan are hiding the letters from Mary.'
- b. Ivane-m da Ketevan-ma c'eril-i Mariam-s da-u-mal-es
 John-ERG and Ketevan-ERG letter-NOM Mary-DAT PVB-3DAT-hide-3PLAOR
 'John and Ketevan hid the letters from Mary.'
- c. Ivane-s da Ketevan-s c'eril-i Mariam-is-a-tvis da-u-mal-eb-i-a
 John-DAT and Ketevan-DAT letter- NOM Mary-GEN-EXT-for PVB-3DAT-hide-TH-3NOM-3SG/PL
 'John has apparently hidden the letters from Mary.'

The interesting fact is that although such classes in Georgian have always been challenging morphologically, they have always appeared to be more straightforward syntactically, at least with respect to the topic under discussion today, as in (9) and (10). Thus, when we coordinate a transitive verb of the first conjugation with an unergative verb as in (9a, c) and (10a, c) or an unaccusative verb as in (9b, d) or (10b, d), in either the present or the aorist series, we get in both cases a fairly unremarkable nominative-accusative pivot where the A argument and the S argument obligatorily corefer. Below each morphological gloss is a case-frame. If coreference tracks case as in, say, Yidiny (Comrie 1981), then the pattern of data in examples (9) and (10) should differ, in that (9) should have a nominative-accusative pivot, while (10) should have an ergative-absolutive pivot, given that the intransitive verbs without overt argument realization are in the imperfective, which patterns along with the Present/Future series, and not the Aorist, in terms of case-assignment.

(9) Present/Future series:

- a. Ivane_i Mariams_j xed-av-s da pro_{i*} t'ir-i-s. (Intr. = 3rd Conj.)
 John-NOM Mary-DAT see-TH-3SGS and cry-TH-3SGS
NOM DAT NOM

'John sees Mary, and (John/*Mary) is crying.' (S_a/A)

- b. Ivane_i Mariams_j xed-av-s da pro_{i*} ga-c'itl-d-eb-a. (Intr.=2nd Conj.)
 John-NOM Mary-DAT see-TH-3SGS and PRVB-red-INGR-TH-3SGS
NOM DAT NOM

'John sees Mary, and (John/*Mary) blushes.' (S_o/A)

- c. Ivane_i Mariams xedavs rodesac pro_{i*} t'ir-i-s
 John-NOM Mary-DAT see-TH-3SGS when cry-TH-3SGS
NOM DAT NOM
 'John sees Mary, when (John/*Mary) is crying.' (S_a/A)

d. Ivane_i Mariams xedavs rodesac pro_i*_j ga-c'itl-d-eb-a
 John-NOM Mary-DAT see-TH-3SGS when PRVB-red-INGR-TH-3SGS
NOM DAT NOM

‘John sees Mary, when (John/*Mary) blushes.’ (S_o/A)

(10) Aorist series:

a. Maia-m_i Eduard-i_j nax-a da pro_i*_j t'ir-od-a
 Maia-ERG Eduard-NOM see-TH-3SGS and cry-IMPf-3SGS
ERG NOM NOM

‘Maia saw Eduard, and (Maia/*Eduard) cried.’ (S_a/A)

b. Maia-m_i Eduard-i_j nax-a da pro_i*_j ga-c'itl-d-eb-od-a.
 Maia-ERG Eduard-NOM see-TH-3SGS and PRVB-red-INGR-TH- IMPF-3SGS
ERG NOM NOM

‘Maia saw Eduard, and (Maia/*Eduard) was blushing.’ (S_o/A)

c. Maia-m_i Eduard-i_j nax-a rodesac pro_i*_j t'ir-od-a
 Maia-ERG Eduard-NOM see-TH-3SGS when cry-IMPf-3SGS
ERG NOM NOM

‘Maia saw Eduard when (Maia/*Eduard) was crying.’ (S_a/A)

d. Maia-m_i Eduard-i_j nax-a rodesac pro_i*_j ga-c'itl-d-eb-od-a.
 Maia-ERG Eduard-NOM see-TH-3SGS when PVB-red-INGR-TH- IMPF-3SGS
ERG NOM NOM

‘Maia saw Eduard when (Maia/*Eduard) was blushing.’ (S_o/A)

In fact, as (10) shows, coreference cannot directly track case-marking, given that the nonovert arguments of the intransitive verbs should receive nominative case, and yet must corefer with the previous verb’s subject, which takes ergative case. So, it would seem based on these facts that coreference must the grammatical relations whatever case those relations in fact receive. However, what has not been realized is that the perfect series appears to behave differently, and most importantly for us, it falls right along the split that we see in the case and agreement morphology. That is, on the one hand, if we coordinate a transitive verb with an unergative intransitive verb in the perfect series, marked with dative case, we get the same obligatory nominative-accusative pivot, as in (11a) and (11c).

(11) Perfect series:

a. Tamaz-s_i Zurab-i_j u-nax-i-a da pro_i*_j u-t'ir-i-a.
 Tamaz-DAT Zurab-NOM 3IO-see-TH-3SgO and 3IO-cry-th-3Sg
DAT NOM DAT

‘Tamaz has (apparently) seen Zurab, and (Tamaz/*Zurab) has cried.’ (S_a/A)

b. Tamaz-*s_i* Zurab-*j* u-nax-i-a da pro_{*ij*} ga-c'itl-eb-ul-a.
 Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO and PRVB-red-TH-PF-3SGS
DAT NOM NOM

‘Tamaz has (apparently) seen Zurab, and (Tamaz/Zurab) has blushed.’ !!! (S_o/A or O)

c. Tamaz-*s_i* Zurab-*j* u-nax-i-a rodesac pro_{*ij*} u-t'ir-i-a.
 Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO when 3IO-cry-th-3Sg
DAT NOM DAT

‘Tamaz has (apparently) seen Zurab, when (Tamaz/*Zurab) has cried.’ (S_a/A)

d. Tamaz-*s_i* Zurab-*j* u-nax-i-a rodesac pro_{*ij*} ga-c'itl-eb-ul-a.
 Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO when PRVB-red-TH-PF-3SGS
DAT NOM NOM

‘Tamaz has (apparently) seen Zurab, when (Tamaz/Zurab) has blushed.’ !!! (S_o/A or O)

On the other hand, if we coordinate a transitive verb with an unaccusative verb, marked with nominative case as they are in all series, we get an optional fluid-S pivot, where the intransitive’s argument can corefer to either the agent or the patient of the transitive verb, as in (11b) and (11d). I have tested these with a number of other unaccusative verbs, so I don’t think these are pragmatic accidents.

The formal analysis is as in (12) below. This is a rather complicated lexical default rule, but it basically means in the special case that an unaccusative verb is coordinated with a transitive in the perfect series, the pivot may optionally be assigned to either argument of the transitive. As a kind of elsewhere condition, we would always expect a nominative/accusative pivot, that should work itself out as a natural consequence of the harmonic alignment of the two hierarchies I mentioned in (1a) and (1b).

(12)

f-str:	(↑TENSE = PERF) ^ ∃(↑OBJ) ^ (α	or (φ(<* ... SUBJ))	or (φ(*> ... SUBJ)
	(→ PRED ARG1 SUBJ)		↑	↑
		↓	↓	↓
a-str:		[−r]	[−r]	[−r]

⇒ (↑PIV) = (↑SUBJ) V (↑OBJ)

5. Constructions and Pivots.

Languages with multiple pivots are not new; Dixon (1994), e.g., notes them for Chukchee (from Nedjalkov 1979), Greenlandic Eskimo (Woodbury 1975), Yupik (Payne 1982), Tongan, and Yidin^y (Comrie 1981)⁴. What distinguishes these languages from the Georgian facts is that to my knowledge for all these languages, the pivot patterns along with some property of the clausal structure, such as having an S/A pivot in matrix clauses but an S/O pivot in subordinate clauses, as in some languages of the Pacific, or closely tracks morphological case marking, as in Yidin^y.

⁴ It may also have been the case for Hurrian (Ilya Yakubovich, p.c.)

The Georgian facts, however, seem not to be dependent on such higher levels of syntactic organization. The same pivot pattern occurs in both matrix and subordinate clause types (as in (9)-(11) above), and the pivot clearly does not follow case marking. If, say, it followed nominative case, we would expect an S/A pivot in the first three conjugations in the present (and not in the dative constructions of the fourth conjugation), a split-S pivot in the aorist, and a different split-S pivot in the perfect. What we actually have is an S/A pivot in two tenses, but a fluid-S in the perfect.

So, why, or whence, does this strange configuration arise? One possibility is that we might ultimately find a diachronic explanation in the pivot properties of Kartvelian languages. This explanation, however, is fraught with difficulties, as there are obviously no longer any speakers of proto-Kartvelian around to make inquiries about which pivots are possible in which contexts, and I am unaware of any attempts to reconstruct such by the Comparative Method. It seems then that we are stuck with a lexical analysis, where specifications for particular pivots can even become lexicalized properties of everyday lexical items, in this case tracking argument structural properties of those items. This proposal is not entirely new. In fact, Falk (ms.) proposes precisely this kind of lexical analysis for Tagalog “voice” morphology, which in his analysis contribute PIV features linked to particular grammatical functions (q.v.).

But if pivots may be lexically determined like this, as they seem to need to be, what then constrains the typology of pivots? Can just any syntactic⁵ pivot pattern occur? If so, why is it the case that so large a number of languages have pivots that target the SUBJ function, producing languages that may be purely morphologically ergative, say, but syntactically accusative? In answer, it may be pointed out that there are many properties of human languages that do not seem to be readily explainable in terms of broader generalizations, “syntactic nuts” in Culicover (1999)’s words. All languages have idioms, for example, which are not semantically compositional, but it is not as frequently recognized or admitted that many languages have syntactically or morphologically idiosyncratic idiomatic constructions as well. In German, e.g., one can say colloquially/dialectally “Butter bei die Fische” (literally “butter by the fish”) meaning something like “okay, now let’s carry out our proposal”, but, as is well known, in the productive parts of German grammar, the preposition *bei* obligatorily takes the dative case in all contexts, which here would imply *den Fischen*, not accusative *die Fische* as in the idiom. These simple exceptions to the rule must be learned at some level, as they cannot be predicted based on anything else speakers may have learned in their environment, and they certainly are not innate.

It may be the case that the Georgian pivot properties are similar, in that speakers have latched onto the very clear sensitivity of Georgian grammar to the underlying argument structure of lexical items (which surfaces most directly in the aorist series), and contrary to the rest of the grammar isolated this one tense for special treatment⁶. Culicover (1999, p. 194-232) has some extended discussion that may provide some insight. He is here broadly concerned with a range of extraction phenomena which do not clearly align with the typological generalizations about extraction hierarchies provided by Keenan and Comrie (1977). He cites Chung and Seiter (1980), for example, on the ergative Polynesian language Rennellese which, contrary to the Keenan-Comrie

⁵ I am excluding pragmatically determined pivots for purposes of this discussion.

⁶ For possible semantic motivations, see Aronson 1990, and Wier Ms.

hierarchy, prefers to have pronouns in long-distance dependencies where you would expect a gap in subject position, but has gaps lower down on the hierarchy. His analysis is nuanced, and a full discussion is well beyond the scope of this paper. But in explaining the Rensselers extraction exceptionality, he crucially makes reference to Hawkins (1994)'s Complexity Metric, in which the constructional correspondence rules between syntactic and conceptual structure can be ranked in terms of the number of constituents required to formulate those very correspondence rules. The significance of this for Culicover is great, in that the Hawkins Complexity Metric provides an objective basis for integrating the formal properties of a grammatical theory such as his into our understanding of language acquisition. As Culicover says, "[I]ndividuating structures has important consequences. For CAL [the Conservative-Attentive Learner], the acquisition of wh-movement for subjects will not entail the possibility of wh-movement of direct objects in the absence of positive evidence about the latter" (205).

Importantly for our understanding of the Georgian pivot properties, since as long as the formal rules can be discretely defined, they can also be measured and ranked in complexity. In this respect, the reason more languages do not have lexically specified pivots such as Georgian, or Tagalog in Falk's analysis, is that the very pivot rules that we deduce for them are so complex that the Conservative Attentive Learner will not readily pick rules like (12) up unless there is positive evidence to the contrary. It may not be the case that all exceptions to linguistic generalizations can be explained away like this, but it may go far in that direction, and bring about a more concrete understanding of human language as a mental and social phenomenon.

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