Available online at www.jlls.org

JOURNAL OF LANGUAGE AND LINGUISTIC STUDIES

ISSN: 1305-578X

Journal of Language and Linguistic Studies, 18(2), 1075-1109; 2022

Disentangling Structural Complexity In A (Challenging) Inflectional System: The Georgian Verb

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APA Citation:

Makharoblidze, T., Leonard, I.L., (2022). , Disentangling Structural Complexity In A (Challenging) Inflectional System: The Georgian Verb , *Journal of Language and Linguistic Studies, 18*(2), 1075-1109; 2022.

Submission Date: 05/02/2022

Acceptance Date: 12/04/2022

Abstract

Georgian and Kartvelian languages (Zan: Mingrelian and Laz, and Svan) are well-known for the complexity of their verbal Inflectional Classes (IC). These languages combine intricate patterns for the three basic components of any verbal inflectional system: morphosyntactic features (person and number agreement), morphosemantic features (Tense, Aspect, Mood and Voice – TAM) and inflectional class traits, which are often the by-product of the association of the former two factors. Moreover, the Kartvelian verbal template displays more than twenty slots, ranging from derivational and inflectional preverbs. The functions of slots often interact (overlap) and their combinations are more than just the sum of the components, accounting for the complexity of Georgian conjugation, which we try to disentangle, using a Word & Paradigm approach. The lexicon interacts with grammar within syntax, with strong consequences for the Rules of Stem Choice component of the IC system. The way the Georgian IC system manages to balance interactions between TAMV (Tense, Aspect, Mood, Voice), valency and (Subject & Object) agreement marking through modular distribution of encoding strategies can further be highlighted by reductionist models such as PFM (Paradigm Function Morphology), in order to unravel deep simplicity beyond high complexity in the surface.

Keywords: Georgian; PFM; verb; Kartvelian; morphology; conjugation; inflectional classes; paradigm; complexity; template; grammar; word; modeling.

1. Introduction

1.1. Disentangling complexity: the quest for simplex models of inflectional patterns

Georgian and Kartvelian languages (Zan: Mingrelian and Laz, and Svan) are well-known for the complexity of their verbal inflectional patterns. These languages combine intricate patterns for the three basic components of any verbal inflectional system in natural languages: morphosyntactic features (person and number agreement), morphosemantic features

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(Tense, Aspect, Mood and Voice, henceforth TAM) and inflectional class traits, which are often the by-product of the association of the former two factors. Moreover, the Georgian verbal template displays more than twenty slots (according to Cherchi, 1999, 18–29), ranging from derivational and inflectional preverbs (see Table 1, slot -3), person agreement (subject, direct and indirect object: slot -2), valency and argumental "flags" or indices (the so-called "version vowels", slot -1), to transitive/intransitive stem formatives (slot +2), a wide array of valency (slots -1, 0, +1, +3, -2, +2, +6, +7, and +8 slots) and TAM suffixes (slots +4, +5 , +2) combined with sets of allomorphic subject agreement markers of the consonantal vs. vocalic type depending on TAM sets, and light verb enclisis (slot +6, see also Tables 8.1 and 10), etc. The functions of slots often interact (overlap) and their combinations are more than just a sum of the components, accounting for the complexity of Georgian conjugation, which we try to disentangle in this paper. Table 1.1 provides the entire template (though in a somewhat reductionist way, as compared to Cherchi, 1999, 18–29), whereas Tables 1.2–3 split this template into subdomains (prefixal, in Table 1.2 versus suffixal, in Table 1.3, see appendix, at the end of the paper).

Table 1.1. Georgian verb template

#	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8
Markers	mi mo mimo da a amo ča čamo še šemo c'a c'amo	v x h s m gv g Ø	u a e i	√	d	av am eb ob i ev op	in evin (+eb)	d od	i e o a	var xar a(rs) vart xart arian viq'av(i) iq'av(i) iq'o iq'os viq'avit iq'avit iq'vnen iq'on	s o es n en an nen	t n en nen an es

Tables 1.2-3 provide more details – and glossing – on the categorical topology of the slots constituting the template, distributed over two rows: inflectional vs. lexical/derivational. Some prefixal categories happen to be ambivalent (which might be a good reason to infer default properties), such as slot -3 (preverb) and -1 (the so-called version markers, linked to argument structures), whereas in the suffixal domain, most categories tend to be inflectional, except +1 and +3.

Table 1. 2. The prefixal domain of the Georgian verb

#	-3	-2	-1	0
Inflectional		prefixal agreement marker	version marker	
Lex/Derivational	Preverb			VERB ROOT (√)

Table 1.3. The suffixal domain of the Georgian verb

	0	+1	+2	+3	+4	+5	+6	+7	+8
Inflectional			thematic suffix		imperfective marker	mood (row) marker	AUX	suffixal nominal marker	plural marker
Lex/Derivational	√	passive marker		causative marker					

Nevertheless, Georgian verb inflectional patterns turn out to be remarkably predictable, regular, depending on TAM series (or screeves, i.e. a set of verb forms within a single TAM category) and valency-driven inflectional classes. We also benefit from the considerable amount of outstanding descriptive models accomplished by Georgian and foreign scholars (Shanidze, 1953; Deeters, 1930; Tuite, 1998; Vogt, 1971; on specific issues like preverbs, see Makharoblidze, 2018; Asatiani, 1952, 2009; Veshapidze 1967; Cherchi 1997 or TAM categories Holisky 1981; number agreement Harris 1978; Tuite 1998; category of version Makharoblidze 2012, Boeder 2005, etc.). Nevertheless, much work is still needed to highlight both the universal characteristics of the Georgian verb – namely, the strong dependency of inflectional patterns on TAM series, and sensitivity to active-stative and transitive-intransitive morphosemantic traits in framing the inflectional class system – on the one hand, and the idiosyncrasy of this system, on the other hand.

Recent models in theoretical and formal morphology such as Paradigm Function Morphology (Stump 2001; 2015, Bonami and Stump 2016), shed new light on the basic parameters underlying the complexity of complex surfacing paradigms. As a Word & Paradigm model, based on a modular approach, exploring inflectional patterns through the lexicon (i.e. inflectional stems, beyond roots) as much as affixal or clitic exponents concatenated to stems, and juncture or sound pattern gradation through morphophonological processes, Paradigm Function Morphology (henceforth PFM) provides an efficient framework for the disentangling of complex conjugation patterns.

In this paper, we will attempt to describe parsimonious sets of Rules of Stem Choice (henceforth RSC) which combine with Rules of Exponence (henceforth RE) and Morphophonological Rules (henceforth MPR).

How do the units generated in these three components of the inflectional system select and/or combine the various units available in the verbal template, as shown in Tables 1.1–3 above. As most of the current literature agrees on at least a set of four morphosemantic inflectional classes (henceforth IC), based on transitivity, telicity and voice,[1] we will revisit them from the standpoint of taxonomic

[1] The reader will find a substantial list of prototypical verbs belonging to the four IC in Harris (1981: 261-267), e.g. as a guideline, IC 1 = transitive verbs of the [X makes/performs (on) Y] pattern, such as ‘bake’, ‘close, shut’, ‘melt’, ‘lock’, ‘sink’, ‘cook’, ‘break off’, ‘engender’, ‘write’, ‘wound’, etc.; IC 2 intransitive verbs: ‘be’, ‘wait

criteria retrievable through a PFM approach. In other words, how can Standard Georgian IC (inflectional class) taxonomy be accounted for by specific RSC combined with RE?

With what effects and consequences do criteria combine in the making up of this taxonomy? How can these patterns contribute to a general theory of IC construction? What are the building blocks which make up these ICs? To what degree are they predictable and regular?

Among others, the TAM series constitute a string of clear-cut inflectional blocks. However, they may vary their range of incidence from one IC to another, and they also allow a polymorphic range of variation, as optional preverbs in some TAM blocks in subjectal ICs. How do TAM series combine, conflict or compete with valency and voice criteria, within the realm of morphosemantic traits?

How do morphosyntactic features like person and number combine, merge or conflate with morphosyntactic ones, such as TAM parameters? How do stem suppletion and stem derivation compete within the range of RSC with preverbal and morphosyntactic traits, such as person and number? How is the circumfixation of morphosyntactic or other kinds of traits allowed in the encoding of such compound forms? How and why does this system allow double or complex marking? As a result, how should IC and TAM series be hierarchized? How could they be initially surveyed in order to disentangle the intricate web of IC/TAMV?

These are but a few questions we will try to address in this paper, using PFM as a taxonomic compass. They nonetheless turn out to be crucial for General Morphology, as a sub-field of General Linguistics.

In section (1.1) we provide basic information about the building blocks of Standard Georgian verb inflection: templatic units, and morphosyntactic exponents (person agreement affixes), as presented above, in Table 1.1-3. In section 2 (Taxonomic Insights), we will sum up the main tenets of Georgian IC taxonomy, according to Cherchi (1999), Tuite (1998), originally based on Shanidze (1953), in terms of formal and semantic properties, in order to pave the way for our PFM analysis, which is developed in section 3. This section makes up the core of this contribution. This section is divided into four subsections, taking a somewhat unexpected turn, as we will first examine IC 2 for intransitive verbs (section 3.1), in order to illustrate empirically simplex patterns, mostly relying on RE complexity and sets of morphosyntactic morpheme subtypes (person and number), combined with morphosemantic (TAMV) affixal markers.

Next, we resume our survey of the main inflectional classes, proceeding in section 3.2. to IC 1 for transitive verbs: monopersonal paradigms first, then pluripersonal paradigms. This section introduces two major cyclical blocks of paradigm functions, between monopersonal (mp), of "the first stem formative cycle", and bipersonal (bp) and tripersonal inflectional patterns, of "the second stem formative cycle". In this complex class, different valency-conditioned layers undergo cyclic application of RSC. Monopersonal RSC exclude preverbs and person markers, and trigger preverbation at RE level, whereas bi- and pluripersonal RSC include object personal markers, and exclude preverbation in their local RE. In section 3.3, the IC 3 for medio-active verbs is surveyed. This class displays a complex set of monopersonal and bipersonal verbs, and intricate patterns of alternations of version vowels at the RSC level. Preverbation does not operate here, and equipollent valency patterns distinctly emerge. Last comes section 3.4 for IC 4, with lexical values linked to medio-passive, atelicity and conceptual structures such as feeling and experience, divided into subclasses A and B, with valency equipollence, similar to the previous forms.

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for', 'agree with', 'fall', 'remain', 'happen', 'be locked', etc., IC 3 inaccusative verbs, such as 'dance', 'sing', 'play', 'quarrel', 'giggle', 'scream', 'yell', 'grumble', 'talk', 'chatter', 'whistle', 'laugh', 'sigh', 'skate', 'swim', 'crawl', 'think', 'reign', 'work', 'study', 'shine', 'drip', etc., IC 4 experiencer and states of being or feeling, such as 'love', 'hate', forget', 'remember', 'hear', 'taste', have', 'want', 'hurt', 'be hungry.thirsty', etc. These sets can be further divided into subclasses (up to 17 according to Harris).

Although we rely on the Standard Georgian description of the IC class system, we have somewhat modified the progression within the IC circuit, for the sake of our demonstration. We therefore start with an intransitive IC, which highlights the power of TAM series (or screeves: a set of verb forms within a single TAM category) in framing the interplay of symmetries and asymmetries in the system. We proceed to the application of PFM for monopersonal verbs enhancing basic RE mechanisms, such as preverbation and Person/TAM markers, to finish with a twofold, partly defective and complex inflectional class, as IC 4. Right in the middle of the turn, we tackle the most intricate inflectional class, i.e. IC 1 (prototypical transitive verbs), with a twofold layering of RSC and RE, accounting for the interplay of morphosyntactic (person & number) with morphosemantic (TAM & valency/voice) features.

The conclusion and further leads for research are provided in section 4, where we answer one by one the questions set forth at the beginning of this article on the fabric of such a (seemingly) complex IC system as Georgian, enhancing the relevance of PFM modeling for General Linguistics.

1.2. The morpho-semantic complexity of Georgian verb inflections

The morpho-semantic complexity of Georgian verb inflections[2] is mainly due to the fact that the row of morphemes in the morphological template often conveys more than just the sum of the units.[3]

Some verbal affixes do not simply belong to the morphological hierarchical level of the language: instead, they can be depicted as cross level (or inter-level) units, relevant to morphology – active at morpho-syntactic level, and at the same time affecting the lexical and semantic levels of the language. Georgian preverbs are good examples of such multilayer combinations, as examples below (1-2c) suggest. Preverbs may convey four different morphosemantic meanings or contents: spatial, temporal, objective, and lexical (Makharoblidze 2018). These contents can be expressed separately, shared, or mixed in the frame of a single preverb. For instance, some Georgian preverbs can provide spatio-temporal content in one form.

An example of shared spatio-temporal content can be seen by comparing examples 2a, 2b, and 2c (with a provisional "classical" segmentation, to start with, although we will later substantially modify the segmentation, terminology, and glossing conventions):

(1) me **ga-v-a-k'et-e** [1] es sakme·
I PV-S1sg-VER/N-do-M this deal/job-NOM.
I did/made this deal.

(2 a) chit'-i **a-pren-s** tavis bart'q'-eb-s.
Bird-NOM VER/N-fly-S3sg its(own) nestlings-PL-DAT
The bird lets/makes its nestlings fly.

(2 b) chit'-i **ga-a-pren-s** tavis bart'q'-eb-s bud-idan.
Bird-NOM PV-VER/N-fly-S3sg its(own) nestlings-pl-DAT nest-from
The bird will let/make its nestlings fly away from the nest.

(2 c) chit'-i **še-a-pren-s** tavis bart'q'-eb-s saxl-shi.
Bird-NOM PV-VER/N-fly-S3sg its(own) nestlings-pl-DAT house-in

[2] See Makharoblidze (2012a) for an overview of verb inflection in standard Georgian, with complete sets of paradigms for most of the verbs presented here.

[3] See Stump (2001, 69–75), where Georgian, along with Potawatomi, is used for a discussion on rule competitions and the opposition between generalizing and expansion schemata for the definition of representational rules.

The bird will let/make its nestlings fly inside the house.

By addition of the preverb ga- or še-, these forms show two types of changes: the verbal action of the present tense becomes future tense and a neutral direction obtains a vector with a concrete direction ('away' and 'into', 'inside of something'). As seen, the preverbs ga- and še- in examples 2b and 2c display shared spatio-temporal content. Tense shifts (examples 2a and 2b or 2c) occur only in the first series, where preverbs produce future "screeves", distinct from present tense. Interestingly enough, preverbs also change the mood while producing screeves like the so-called xolmeobiti (i.e. the screeve for subjunctive-conditional) from the so-called uc'q'vet'eli screeve (i.e. indicative). Here tense, mood and aspect change along with spatial content. In the other series, preverbs convey only aspectual functions (though inserted in the temporal slot).

Verbal prefix vowels are also poly-functional. They can encode valency-increasing processes in the verbs, passive mood, the possessive-destinative category of version (see Makharoblidze 2012b), they also occur as flexion affixes without derivational functions. In Indo-European languages, preverbs mostly show asemantic relatedness – as with the fourth type of lexical derivation (Aronoff & Rees-Miller 2000, 232). Compare: Latin **con**ducere 'hire', **tra**ducere 'transfer' /'translate', **de**ducere 'bring', **re**ducere 'must', or Russian pisat 'write,' **pri**pisat 'ascribe' **o**pisat 'describe', **pod**pisat 'sign' etc. In all these forms, the lexical and strongly derivational content of the preverbs is obvious, as compared to Georgian verbs in which preverbation occurs, with a more complex set of either argument or TAMV agreement or morphosyntactic features. Although preverbation is a morphological phenomenon, studying the argument structure of Georgian verbs modified by preverbation provides a good opportunity to explore the syntax-semantics and syntax-lexicon interfaces (McGillivray, 2013, 119).

As seen in the above examples, it is not easy to draw a clear-cut line between derivation (i.e. lexicon), inflectional morphology and syntactic parameters in Georgian verb forms. It is even more challenging as Georgian also has complex patterns of bi-argumental inflected paradigms, which make verb inflection even more intricate.

PFM as a grid

In order to disentangle the intricate sets of TAMV and argument features or traits conveyed by affixes (or clitics) in Georgian, we will analyze verb paradigms according to PFM (Paradigm Function Morphology). PFM makes it possible to parse blocks of paradigms, depending on their integration in the lexicon (RSC: Rules of Stem Choice) or inflectional grammar (RE: Rules of Exponence, for affixes and clitics). When necessary, controversial issues in the segmentation of stems and chains of affixes or clitics can eventually find a solution through MPR (Morphophonological rules). A PFM approach can be applied to the Georgian verb, in order to disclose and to test the combinatory constraints determining formal patterns, for every single peculiarity which may occur in the framing of any verbal form through inflection (i.e. for any PF or Paradigmatic Function, i.e. any discrete cell in an inflectional matrix). As we'll see in this paper, a thorough PFM analysis enhances segmentation paradoxes in current research, and highlights the fine-grain of Morphology/Syntax interaction with the lexicon – a major issue in the survey of modular interactions and interfaces in grammar. PFM unravels implicit hierarchies through cycles of construction of inflected lexemes, depending on (language-induced) parameters, according to universal trends. In this respect, Georgian provides an outstanding empirical field of observation.

Theoretically, the threefold division between Item & Arrangement (henceforth, I-A, i.e. the so-called agglutinative/concatenative approach) and Item & Processes models (henceforth, I-P, i.e. the synthetic or fusional concatenative standpoint), inherited from Hockett (1954), reminds us to what extent models in inflection morphology have to cope with inner diversity in any language. In many

respects, PFM is a Word & Paradigms model[4] (henceforth, W-P, i.e a lexical stem versus grammatical exponent approach) in terms of its focus on Inflectional Class taxonomies, deeply rooted in lexemes. An I-A model analyses inflected forms from a templatic standpoint, linearly, as in Tables 1.2-3 above, from an incremential standpoint (affixes expand around or from the lexical root, and they are assigned a clear-cut distribution), whereas an I-P model allows more scope for morpheme merging and coalescence, from a more inferential standpoint. Last but not least, a W-P model does not assume that morphosyntactic or morphosemantic features should be defined according to cannonical or a priori arrangements (distribution). Its main concern is rather how these bunches of formal properties surface in variable configurations, from lexemes in the lexicon to stems and morphs in speech (realizations).

Taking templatic complexity in Georgian (at least 12 or even 13 morphological slots in the verbal complex for), we will first describe the morphosemantic slots which build up the template, as in Table 1 above. This template will work as our distributional compass to proceed with the intricate web of verb paradigms in Georgian throughout this paper. Such a templatic description of a verb complex in any language is undoubtedly useful, for the sake of structural description, although one should bear in mind that it is only part of the modeling of an inflectional system – namely from the standpoint of I-A.

Beyond this trivial approach, subsequent W-P and I-P processing can offer much more: on the one hand, inflectional class taxonomy, on the other, a parsimonious and powerful array of morphonological processes accounting for residual allomorphy, out of the arrangement strategies (either concatenative, as in Georgian, or non-concatenative, as in Semitic). PFM, through its two main theoretical steps (Stump 2001 and Stump 2015 and Bonami & Stump 2016, i.e. PFM I and II), provides a synthesis of the three models (I-A, I-P and W-P).

Examples (2d) and (2e) illustrate what could be called 'atomistic' segmentation of data, according to the basic template for the Standard Georgian verb posited in tables 1.1–3, following a typically I-A model, instead of an I-P and a W-P approach. The application of cyclical blocks of rules according to PFM will conflate subdomains, as with e.g. gavuk'etebdit in (2d) analyzed as RSC (u)k'et(eb) combined with RE gav__dit 'We would do it for him/her/them', or (2e) dagvixat'avdet, parsed as RSC (i)xat'(av) combined with RE dagv__det. Cyclicity could also account for circumfixation of exponents (prefixes and suffixes), depending on the choices made in modeling resalisational complexity. We will segment preverbs as proclitics, with an equative symbol < = > instead of a hyphen < - >, because of their distributional properties, as peripheral markers. The fact that preverbs are posited in slot -3 in the inflectional template, preceding even person agreement markers in slot -2 also advocates for an analysis in terms of proclisis.

2d) gavuk'etebdit

⇨ ga = v-u-k'et-eb-d-i-t

#	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8
	ga	**v**	**u**	**k'et**		**eb**		**d**	**i**			**t**

'We would do it for him/her/them'.

NB: This form can also appear with 'xolmeobiti'meaning (i.e. subjunctive-conditional) – in which case the translation would be 'We used do it for him/her/them'.

2e) dagvixat'avdet

⇨ da =gv-i-xat'-av-d-e-t

[4] The Word & Paradigm model is most indebted to initial contributions by P. H. Matthews (1970, 107–109; 1972, 56–103). Our quick survey of I-A, I-P and W-P models is highly indebted to Karlsson (1977).

#	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8
	da	**gv**	**i**	**xat'**		**av**		**d**	**e**			**t**

'(If) You(pl) would paint it for us'.

The last three values at the suffix periphery share a somewhat similar domain. The third person subject plural marking is an example of two in one multiexponency (one morpheme with two contents). Thus, such markers can combine, sharing the merged values 6/7, 6/8, 7/8 or 6/7/8.

Morphosyntactic prefixal exponents of Person and Number (slot -2), as opposed to morphosemantic suffixal exponents of TAM, make up a twofold set of subseries, often considered as subject versus object markers in the literature (Harris, 1985, 1991; Holisky 1991, Boeder, 2005, Tschenkeli, 1958, Deeters, 1930). Nevertheless, as Lacroix (2011, 361, 363–65) rightly points out, this categorization is unsatisfactory for PN (Person, Number) exponents, as Agent and Patient argument properties overlap or undergo blurring through PN specification in many respects, in both paradigms.

(3) Person markers:

(3.1) Lacroix's series PN1 (formerly 'subject markers', or the weak or default subset of PN prefixes)[5]:

1 sg	**v-**	-----		**1 pl**.	**v-**	-----	**-t**
2 sg.	**x-**, **h-**, **s-**, **Ø-**	-----		**2 pl**.	**x-**, **h-**, **s**, **Ø-**	-----	**-t**
3 sg		-----	**-s**, **-a**, **-o**	**3 pl**.		-----	**-es**, **-en**, **-nen**, **-an**, **-on**, **-n**

(3.2) Lacroix's series PN(1-)2 (formerly 'object markers', or the strong subset of PN prefixes):

1 sg	**m-**	-----		**1 pl**.	**gv**[6]**-**	-----	
2 sg	**g-**	-----		**2 pl**.	**g-**	-----	**-t**
3 sg	**h-**, **s-**, **Ø-**	-----		**3 pl**.	**h-**, **s-**, **Ø-**	-----	**-t**

The overall picture is actually more complex, as Standard Georgian can be considered to have at least four PN class markers, including the secondary PN1 class subset containing the inflected copula (1 sg (v)– ar, 2 sg (x)–ar, 3 sg – ar-i-s =a/s, 1 pl (v)– ar-t, 2 pl – (x)-ar-t, 3 pl – ar-i- an). But we do not need to enter in such taxonomic details here, as these exponents will soon be accounted for by Rules of Exponence within the PFM framework. For further details, see Harris, 1981, 211–227; Cherchi, 1997: 12–14, 25; Lacroix, 2011).

As a mater of fact, many subsystems contribute to inflectional, but also to derivational patterns in Georgian, making up a complex system of embedded subsystems, which actually has more to do with predication proper than with transitivity or active/stative parameters (see Müller 2014, for a

[5] Of course, the series PN1 and PN2 agreement circumfixes were not contrived by René Lacroix: they belong to the bulk of Kartvelian grammar description. Nevertheless, we retain his conflative approach of series PN1 & 2, as exposed here.

[6] Although series PN1 *m-*, as opposed to series PN2 *gv-*, flows from a former exclusive vs. inclusive PN opposition in early Georgian (V-VIIth century A.D.).

recent survey of predicates). As mentioned in Tuite (1996, 376), a polyvalent root like xar 'happy, joyful' may generate an array covering the four basic IC, through the interplay of preverbs, version vowels, stem increments, but also case shift, as in axarebs (a-xar-eb-s, i.e pv=vers-stem-3) 'someone makes someone happy' (**causative predicate**) with the primary causative affixes a-eb (see Uturgaidze, 2002) and xarobs (xar-ob-s: stem-3) 'someone rejoices' (**atelic predicate**), etc.

Most of the complexity presumed by linguists when describing Georgian IC systems or taxonomies therefore results from the interplay of valence, semantic roles and argument structure, voice, TAM, PN agreement and the construction of the predicate. In other words, surface complexity results from the intricacy of interactions between predication, speech event and discourse coordinates, and lexical structures. All these components "conspire" at building up consistent inflectional classes, from the formal standpoint of morpheme combinatorics and stem or affixal allomorphy on the one hand, and from the standpoint of general principles of lexical taxonomy on the other.[7] This combination of parameters from various components of language as a semiotic structure (lexemes and morphemes) as much as a communicative tool (pragmatic and discursive coordinates), rooted in a lexicon and its combinatorics, is very informative for general linguistics. However, the intricacy of the system requires simplex rather than complex modeling.

2. Taxonomic insights

Table 2 provides a sketch of the main paradigms, retaining 1sg, 3sg & Pl, as the most exemplar cells (or paradigm functions) for Subject agreement. We implement our segmentation, considering preverbs as clitics and thematic increments like -av, -eb, (-il, -ul). These are not thematic markers but rather lexical derivational elements. Additional thematic markers are -ob, -am, -i.) etc. (slots +2, +3) as organic components of stems, in accordance with RSC, which will be further described below. Affixal chains are not further segmented, in accordance with RE patterns (ex: IC 3, screeve III, 3 pl ut'ir-niat, instead of u-t'ir-n-i-a-t, as we consider that person and number slots in the template conflate into a single chain). This table is conceived as a sample before delving into the PFM processing of these paradigms, with comprehensive charts accounting for all subject agreement forms. Item 'lie' for IC 4 stands for the positional verb (past 'lay'). Preverb combinatorics, whether distributed (±Pv) or privative (-Pv) and inversion patterns (Inv i/u, i/e) are pointed out in the second row, although the full application of these properties will only be available in the comprehensive chart. The enclitic copula (=Cop in the second row of the table) is also mentioned as an important "block" in the building up of the Standard Georgian inflectional class system.

Table 2. Principal parts and a sample of main IC verbs in Standard Georgian

'Screeve', or TAMV series	IC 1 'paint'	IC 2 'hide'	IC 3 'cry'	IC 4 'lie'
FP	**±Pv & Ver i/u**	**±Pv, Ver i & =Cop**	**-Pv & Ver i/u**	**-Pv, Ver i/e & =Cop**
I/a Pr.Ind. 1 sg	v-xat'av	v-imaleb-i	v-t'iri	v-c'ev=(ᵛ)ar[8]

[7] A very useful survey of competing models and theories for IC taxonomy (i.e. criteria for classification, namely FP sets) in Georgian, by native and foreign scholars, since the last century, can be found in Cherchi (1997, 27–74).

[8] We assume that a phonotactic MPR induced by consonantal homorganicity blocks the person 1 sg *v-* agreement prefix in the inflected enclitic copula, after a *-v* final lexical stem.

3 sg	xat'av-s	imaleb-a	t'iri-s	c'ev-s
3 pl	xat'av-en	imalebi-an	t'iri-an	c'v-an-an[9]
I/b Fut.Ind.		+Pv	-Pv	-Pv
1 sg	da= v-xat'av	da=v-imaleb-i	v-it'ireb	v-ic'vebi
3 sg	da=xat'av-s	da=imaleb-a	it'ireb-s	ic'veb-a
3 pl	da= xat'av-en	da=imaleb-i-an	it'ireb-en	ic'vebi-an
II Aorist Ind.				
1 sg	(da)= v-xat'e	da=v-imal-e	v-it'ir-e	v-ic'ev-e
3 sg	(da)=xat'-a	da=imal-a	it'ir-a	ic'v-a
3 pl	(da)=xat'-es	da=imal-nen	it'ir-es	ic'v-es
III Perf. Ind.				
1 sg	da=m-ixat'av-s	da=v-malul=v-ar	m-i-t'irni-a	v-c'olil=var
3 sg	da=uxat'av-s	da=malul-a	u-t'irni-a	c'olil-a
3 pl	da=uxat'av-t	da=malul-an	u-t'irni-a-t	c'olil-an

From this set of data, we can give the following summary, in a less formal way than in Cherchi's account (1999) above, based on Shanidze's classification.

Class 1: all kind of transitive or, more properly, polyvalent verbs (such as xat'av 'paint': X paints Y for W). These verbs produce future screeves (i.e. I/b) with preverbs and optionally in the aorist, but not in the first series (I/a). They undergo what could be called "split inversion" conditioned by SAP in the third series (screeve III, 1 sg da=m-**i**xat'av-s, 2 sg da=g-**i**xat'av-s, versus 3 sg da=**u**xat'av-s, 3 Pl da=**u**xat'av-t.)

Class 2: intransitive verbs, including passive verbs with i- and e- version prefixes and d- person & number affixes. These lexemes have the imperfective markers od- in their RE, and the thematic marker eb- (in most cases) in their RSC. The third series triggers auxiliary verbs (the inflected copula), while the future screeves trigger preverbs.

Class 3: Medio-active/intransitive verbs. These verbs produce I/b future screeves, series II and III with version vowel i- (for monopersonal functions) and u- for bipersonal functions, at RSC level. Morphosyntactically, with the subject is in the ergative case in series II, and in the dative case in series III.

Class 4: intransitive verbs, medio-passives and static passives. These lexemes are highly defective, as screeves in series II or the imperfective, as well as the present subjunctive are missing. They take auxiliary verbs (copular PN paradigms) in the third series.

Now, having detailed these basic principles for Georgian inflection, in accordance with the bulk of most currently recognized inflectional classes, we can tackle verb inflection patterns in standard Georgian according to PFM. We will start our argumentation with an exemplary irregular verb, in order to make the contrast between screeves (I–III) more explicit, thanks to suppletion, before proceeding with the four main classes, although again in a somewhat different order, so as to enhance the simplexity of the system, beyond its apparent complexity.

3. A PFM analysis

3.1. Inflectional Class 2

[9] Note here the weak grade of the root, or Zero degree *c'v-*, alternating with the full grade allomorph *c'ev-* (see Gamkrelidze, 73-5).

IC 2 (monopersonal intransitive verbs) provides a clear-cut sketch of basic formative processes for stem derivation, and shows the most parsimonious person agreement strategies for RSC. It also displays basic TAM exponents, in the RE block. In contrast, IC 1 (pluripersonal transitive verbs) highlights patterns of complexity, with enmeshed polyexponential stems, and valency/voice in the prefixal domain. This intricacy explains why we analyse IC 1 after IC 2. The two next steps in our analysis highlight bipersonal agreement marking patterns for atelic verbs (IC 3) and a somewhat intricate cluster of inflectional subparadigms for verbs, which can be monovalent or bivalent, as the processes they account for has much to do with experiencer roles and control over the process.

We believe that this somewhat unusual way of handling the description of Georgian verb paradigms (that is, starting with IC 2 instead of IC 1) may help to better understand how this system works holistically, from the standpoint of a Word & Paradigm model such as PFM.

We are now in a position to examine the whole range of the four regular conjugations in standard Georgian, from IC 1 to 4, starting with the simplest of all (IC 2). The templatic RSC (TRSC, in [4.1] below) pattern for the root MAL 'hide' (IC 2), can be described as in (4.1).

(4.1) TRSC (Templatic Rules of Stem Choice)
$TRSC_1$ = X (malul): template [X = 0, 2][10]
$TRSC_2$ = X (imal): template [X = -1, 0]
$TRSC_3$ = X (imaleb): template [X = -1, 0, 2].

In (4.2), we give the structural description for these stems, starting with stem malul, which differs notably from other stems since it does not have the vocalic subjective marker prefix i-, as opposed to all other forms, which all expand the basic imal stem with TAM rules of exponence (imal-**o**, imaleb-**od**, imaleb-**ode**). Again, RSC are ordered according to Pāṇini's rules: the more specific, the higher in the ranking, the more general, the lower, as in (4.2).

(4.2) IC 2: main stems from Root: MAL 'to hide'
(i) $RSC_{III(IC\ 2)}$: Stem X_1 (⟨**malul**, σ⟩)
(ii) $RSC_{II(IC\ 2)}$: Stem X_2 (⟨**imal**, σ⟩)
(iii) $RSC_{I(IC\ 2)}$: Stem X_3 (⟨**imaleb**, σ⟩).

Again, RSC ranking (from i to iii) is not based on derivation, i.e. from a primary to a secondary stem, but instead follows Pāṇini's rules, based on the cell count in the tables: the fewer the cells, the higher the item is in the hierarchy, for the sake of morphological markedness. At this step of the argumentation, we therefore need a complete description of paradigms and cells, as in Table 9. Later on, we'll show data in a more reader friendly shape, i.e. according to principal parts.

Tables 3.1-4 display TAMV categories and singular and plural subject agreement, depending on preverbal (+PV) or non-preverbal (-PV) stem derivation. Instead of lexical stem suppletion across series of TAM screeve markers, as for an irregular verb as tkma 'say' for the RSC block (with an ambob stem in screeve I/a vs. tq'v' and tkv stems for screeves I/b and II-III), we face an array of alternating stems, such as imaleb for series I/a-b, imal for SM II and malul for SM III. The Present Indicative subseries I/a does not carry a preverb (here, a negative feature encoded as -PV in Table 5.1), and could therefore be considered the default paradigm, whereas all other series, including subset I/b activate the da= preverb, and are therefore considered a +PV paradigmatic block. Because preverbs are

[10] Slot 0 here in the template combines with a participial allomorph. In Georgian, gerunds are particularly interesting, with stem allomorphy linked to TAMV series (screeves) and inversion, especially in screeve III.

externally configurated, i.e. they preceed subject agreement prefixes, we will consider them as proclitics instead of prefixes proper – a trend which is all the more obvious in object agreement inflections for verbs of the first inflectional class (IC 1).

In screeve III, pluperfect and perfect subjunctive patterns involve a compounding strategy (segmented with # below), involving the predicative auxiliary series I/a of -q'opna 'to be': present indicative 1sg v-ar, 2sg x-ar, 3sg ar-is, 1pl var-t, 2pl x-ar-t, 3pl ar-ian, although here appearing in a reduced and somewhat defective shape: 1sg 'It seems I hid /have hidden': da=v-malul#v-ar, 2sg da=malul#x-ar, 3sg da=malul+a, 1pl da=v-malul#v-art, 2pl da=malul#x-ar-t, 3pl da=malul#a-n. Moreover, the double subject agreement pattern, e.g. prefixal v- in 1sg da=v-malul#v-ar, 1pl da=v-malul#v-ar-t suggests the predicative formant still preserves its status as a light verb.[11]

Table 3.1. Present Subseries: I/a, -PV. Root MAL 'hide', stem **imaleb**

I/a	Present Indicative	Imperfect	Present Subjunctive
-PV	Ex. 'I hide/am hiding'	'I was hiding'	'If /I wish I were hiding'
1 sg	vimalebi	vimalebodi	vimalebode
2 sg	imalebi	imalebodi	imalebode
3 sg	imaleba	imaleboda	imalebodes
1 pl	vimalebit	vimalebodit	vimalebodet
2 pl	imalebit	imalebodit	imalebodet
3 pl	imalebian	imalebodnen	imalebodnen

Table 3.2. Future Subseries: I/b, +PV. Root MAL 'hide', stem **imaleb**

I/b	Future Indicative	Conditional & imperfect past
+PV	Ex. 'I will hide'	'If I hide'/'I used to hide'
1 sg	davimalebi	davimalebodi
2 sg	daimalebi	daimalebodi
3 sg	daimaleba	daimaleboda
1 pl	davimalebit	davimalebodit
2 pl	daimalebit	daimalebodit
3 pl	daimalebian	daimalebodnen

Table 3.3. Aorist Series: II, +PV. Root MAL 'hide', stem **imal**

II	Aorist Indicative	Optative
+PV	'I hid'	Ex. 'I (must/want to/can) hide'
1 sg	davimale	davimalo
2 sg	daimale	daimalo
3 sg	daimala	daimalos
1 pl	davimalet/davimalenit	davimalot

[11] In fact, suffixal chains such as 3sg *ar-is*, 3pl *ar-ian* would be segmented as 3sg *ar-i-s*, 3pl *ar-i-a-n* in traditional analyses, with subglossing for TAM and PN. Nevertheless, according to PFM, *-is* and *-ian* should rather be considered as merging the exponent in the RE component of the model, and described as unsegmented exponent clusters, as in (5.2) below.

2 pl	daimalet /daimalenit	daimalot
3 pl	daimalnen	daimalon

Table 3.4. Perfect Series: III, +PV. Root MAL 'hide', stem **malul**

III	Perfect, evidential	Pluperfect
=Cop	'It seems I hid/have hidden'	'(If) I would hide'
1 sg	davmalulvar	davmalul[v]iq'av(i)
2 sg	damalulxar	damaluliq'av(i)
3 sg	damalula	damaluliq'o
1 pl	davmalulvart	davmalul[v]iq'avit
2 pl	damalulxart	damaluliq'avit
3 pl	damalulan	damaluliq'vnen
+PV	Perfect subjunctive	
	'I wish I could hide'	
1 sg	davmalul[v]iq'o[12]	
2 sg	damaluliq'o	
3 sg	damaluliq'os	
1 pl	davmalul[v]iq'vnet	
2 pl	damaluliq'vnet	
3 pl	damaluliq'vnen	

The pluperfect, e.g. 1 sg. davmalul[v]iq'av(i) '(If) I would hide', and perfect subjunctive patterns such as 1 sg davmalul[v]iq'o 'I wish I could hide' show the same compounding pattern, although these paradigms involve the recruitement of the aorist suppletive stem for the predicative augment (-iq'av-).

We should now scrutinize RE patterns for monoargumental verbs through TAM screeves, in order to see how they behave in this exemplar inflectional class. The data in (5) below show three sets of representations: first, in (3.1), are the realisational forms based on RSC_4 according to which the stem (X_3) is imaleb, whereas the affixal exponents appear in standard fonts: e.g. 1sg vimalebi, in other words, v-imaleb-i, where AGRS1sg is prefixed (with a v- exponent) to series I/a-b, and to some extent suffixed, with a mood row vowel marker -i, as a specifying element merging subject agreement and person (compare 1sg vimalebi to 3sg imaleba).

(5.1) I series $RSC_{I(2)} = X_3$ (imaleb)
Present Indicative: 'to hide / to be hiding' (ex. 'I hide / am hiding')

1 s. v-imaleb-i	1pl. v-imaleb-it
2 s. imaleb-i	2 pl. imaleb-it
3 s. imaleb-a	3 pl. imaleb-ian[13]

In (5.2), Rules of Exponence (RE) are given for the lexeme imaleb, such as RE: $X_{I(2.a)}$ σ {AGRS {PERS 1, NUM SG}; MOOD { }} ⇒ v⊕X⊕i = ⟨< vimalebi, σ >⟩. Here subject agreement (AGRS) and TAM features such as mood, not previously taken into account in RSC above, are listed

[12] In Modern Georgian, the 1sg prefixes indicated here and below as [*v*] between brackets in the data, can be omitted.
[13] Same segmentation as explained in footnote 12 above.

inside brackets, as a structural input for the realisational output given after the ⇒ sign, followed by the chain of exponents: v⊕X⊕i = ⟨< vimalebi, σ >⟩. The prefix v- branches into the left domain, as a labial branching onset which concatenates to the stem X_3 (imaleb), which concatenates in turn with the thematic vowel -i, giving vimalebi as a realisational set (as suggested by the sigma) for the inflected form "I hide / am hiding').[14]

(5.2) Rules of Exponence for the lexeme imaleb ($IC_{I(2.a)}$) = X_4:

(i) RE: $X_{I(2)}$ σ {AGR {S: 1, NUM SG}; M:{ }} ⇒ v⊕X⊕i = ⟨< vimalebi, σ >⟩
(ii) RE: $X_{I(2)}$ σ {AGR {S: 2, NUM SG}; M: { }} ⇒ X⊕i = ⟨< imalebi, σ >⟩
(iii) RE: $X_{I(2)}$ σ {AGR {S: 3, NUM SG}; M: { }} ⇒ X⊕a = ⟨< imaleba, σ >⟩
(iv) RE: $X_{I(2)}$ σ {AGR {S: 1, NUM PL}; M: { }} ⇒ v⊕X⊕it = ⟨< vimalebit, σ >⟩
(v) RE: $X_{I(2)}$ σ {AGR {S: 2, NUM PL}; M: { }} ⇒ X⊕it = ⟨< imalebit, σ >⟩
(vi) RE: $X_{I(2)}$ σ {AGR {S: 3, NUM PL}; M: { }} ⇒ X⊕ian = ⟨< imalebian, σ >⟩.
NB: MOOD { }stands for "indicative mood" as the default mood.

Imperfect and subjunctive screeves recruit the same X_3 stem as in the previous set of paradigm functions. The building blocks of this stem following the template read as (slots -1, 0, 2, 4, 5, and optionally slot 8). Rules of exponence read as in (6).

(6) Rules of Exponence for the lexeme imaleb ($IC_{I(2.a)}$) = X_3:

(vii) RE: $X_{I(2)}$ σ {AGR {S: 1, NUM SG}; M: { }} ⇒ v⊕X⊕odi = ⟨< vimalebodi, σ >⟩
(viii) RE: $X_{I(2)}$ σ {AGR {S: 2, NUM SG}; M:{ }} ⇒ X⊕odi = ⟨< imalebodi, σ >⟩
(ix) RE: $X_{I(2)}$ σ {AGR {S: 3, NUM SG}; M: { }} ⇒ X⊕oda = ⟨< imaleboda, σ >⟩
(x) RE: $X_{I(2)}$ σ {AGR {S: 1, NUM PL}; M:{ }} ⇒ v⊕X⊕odit = ⟨< vimalebodit, σ >⟩
(xi) RE: $X_{I(2)}$ σ {AGR {S: 2, NUM PL}; M: { }} ⇒ X⊕odit = ⟨< imalebodit, σ >⟩
(xii) RE: $X_{I(2)}$ σ {AGR {S: 3, NUM PL}; M: { }} ⇒ X⊕odnen = ⟨< imalebodnen, σ >⟩.

The Present Subjunctive in (7) 'If /I wish I were hiding', does not need rewriting in any of the sequences. A trivial RE formula set and a simple MPR will be sufficient, especially in order to highlight a clear-cut choice in segmentation.

(7) Rules of Exponence for the lexeme imalebode:

(xiii) RE: $X_{I(IC\ 2)}$ σ {AGR {S: 1, NUM SG}, M: {Subjunctive}} ⇒ v⊕X⊕ode = ⟨< vimalebode, σ >⟩
(xiv) RE: $X_{I(IC\ 2)}$ σ {AGR{S: 2, NUM SG}, M: {Subjunctive}} ⇒ X⊕ode = ⟨< imalebode, σ >⟩
(xv) RE: $X_{I(IC\ 2)}$ σ {AGR{S: 3, NUM SG}, M: {Subjunctive}} ⇒ X⊕odes = ⟨< imalebodes, σ >⟩
(xvi) RE: $X_{I(IC\ 2)}$ σ {AGR{S: 1, NUM PL}, M: {Subjunctive}} ⇒ v⊕X⊕odet = ⟨< vimalebodet, σ >⟩
(xvii) RE: $X_{I(IC\ 2)}$ σ {AGR{S: 2, NUM PL }, M: {Subjunctive}} ⇒ X⊕odet = ⟨< imalebodet, σ >⟩.
(xviii) RE: $X_{I(IC\ 2)}$ σ {AGRS{S: 3, NUM PL}, M: {Subjunctive}} ⇒ X⊕odnen = ⟨< imalebodnen, σ >⟩.
(xix) MPR_1: stem final vowel deletion in RE_6: <<$X^{V\#}$>nen>> → <Xnen>

[14] See Léonard & Kihm (2010, 2015) for similar PFM formalization of RSC and RE (in Mazatec).

The main parameter in TAM series (screeve) I/b is preverbation. Here a cyclical incremential layer takes over previous sets of RSC from (5) on the one hand, and RSC & RE from (6) on the other hand, to generate the future subseries I/b, indicative and conditional, without any further complexification, as in (8):

(8) (i) RE: $X_{I/b(IC\ 2)}\ \sigma$ {{S: 3, NUM SG}; MOOD { }} $\Rightarrow$ da$\oplus X_3 \oplus$a = $\langle$<daimaleba, σ >$\rangle$.
(ii) RE: $X_{I/b(IC\ 2)}\ \sigma$ {AGRS {S: 3, NUM SG}; MOOD {conditional}} $\Rightarrow$ da$\oplus$X$\oplus$oda = $\langle$< daimaleboda, σ >$\rangle$.

TAM series II recruits stem 2, as declared above: $RSC_{II(2a)}$: Stem X_2 ($\langle$IMAL, $\sigma\rangle$). Here, the sets of exponents are as follows, in (9) and (10):[15]

(9) (i) RE: $X_2\ \sigma$ {AGR:{PERS & NUM}; T: {Aorist}, M: { }} $\Rightarrow$ $\langle$<da$\oplus$v– X_2 -e · da$\oplus$– X_2 -e da$\oplus$– X_2 -a · da$\oplus$v– X_2 -et/-enit · da$\oplus$– X_2 -et/enit · da$\oplus$– X_2 -nen >$\rangle$.
(ii) TRE = X_2 & [-3, (-2)_5, 6, (8)].

(10) (i) RE: $X_2\ \sigma$ {AGR:{PERS & NUM}; M: {Volitive or optative}} $\Rightarrow$ $\langle$<da$\oplus$v– X_2 -o · da$\oplus$– X_2 -o · da$\oplus$– X_2 -os · da$\oplus$v– X_2 -ot · da$\oplus$– X_2 -ot · da$\oplus$– X_2 -on >$\rangle$.
(ii) TRE = X_2 & [-3, (-2) – 5, 6, (8)].

In summary, this regular verb from IC 2 has shown the following sets of stems and exponents, with high sensitivity to the incidence of TAM series, as shown in Table 4:

Table 4. Sets of Realisational Rules for the verb imaleb 'to hide'

TAM Series	**Screeves**		
I/a	PRESENT	IMPERFECT	SUBJUNCTIVE PRS
	RSC: **imaleb**	RSC: **imaleb**	RSC: **imaleb**
NOPV	RE: v– -i, -i, -a, v– -it, -it, ian	RE: v– -odi, -odi, -oda, v– odit, -odit, -odnen	RE: v– -ode, -ode, -odes, v– odet, -odet, -odnen
I/b	FUTURE	CONDITIONAL	SUBJUNCTIVE FUTURE
	RSC: **imaleb**	RSC: **imaleb**	RSC: **imaleb**
PV	RE: **da-** & v– -i, -i, -a, v– -it, -it, ian	RE **da-** & v– -odi, -odi, -oda, v– odit, -odit, -odnen	RE: **da-** & v– -ode, -ode, -odes, v– odet, -odet, -odnen
II	AORIST	OPTATIVE	
	RSC: **imal**	RSC: **imal**	
PV	RE: **da-** & v_-e, -e, **-a**	RE: **da-** & v– -o, -o, **-os** v– -ot, -ot, **-on**	

[15] In series II, preverbs are facultative. Here we take the maximal paradigm into account.

	v– -et/-enit, -et/-enit, -**nen**		
III	PERFECT	PLUPERFECT	CONJUNCTIVE PERFECT
	RSC: **malul**	RSC: **malul**	RSC: **malul**
PV	RE: **da**- & v– var, -xar, -a v– vart, -xart, -an	RE: **da**- & v– (v)iq'avi, -iq'avi, -iq'o, v– -(v)iq'avit, -iq'avit -iq'vnen	RE: **da**- & v– -(v)iq'o, -iq'o, -iq'os, v– -iq'vnet, -iq'vnet, -iq'vnen

We can now broach a more complex paradigm, with more intricate data. Verb class 2 for monoargumental verbs showed the important role preverbs play in creating asymmetries in inflectional patterns in Standard Georgian conjugation. As we could see, patterns were fairly regular and simple, relying mostly on derived stems and light exponence. With the next inflectional class (IC 1 according to the current taxonomy), we will enter a more complex realm of inflectional mechanisms, and we will have to consider two sets of person markers (as in the data set 3.1-2 above).

3.2. Inflectional Class 1 (IC 1)

We will expose the composition of IC 1 for polypersonal verbs in Tables 7.1–3, in order to show the full picture of the subject-object application to paradigm functions.

Three version types (slot -1 in the template) must be considered here:

1. Neutral, with the prefix markers a-, Ø-, as in v-**Ø**-xat'av 'I'm painting it';
2. Subjective, with the PN prefix marker i-, as in v-**i**-xat'av 'I'm painting it for myself'. The verbal act is performed by the subject and for the subject. This is a category of introversion semantics (Machavariani, 1987, 124).
3. Objective, with PN prefix markers, **i**- marks the indirect object of the +SAP (Speech Act Participant) persons (i.e. P1 and P2 and **u** – for the indirect object in the third person, i.e. the -SAP persons. The objective version conveys the meaning that the verbal act is being performed in the interests of the indirect object. Compare: g-**i**-xat'av 'I'm painting it for you' and v-**u**-xat'av 'I'm painting it for him/her'. This is a category relevant to extraversion, of the morphosemantic type (Machavariani, 1987, 124), instead of a mere morphosyntactic type. The fact that transitivity is sensitive to SAP is one of the criteria making up the IC taxonomy, with a clear-cut asymmetry in version marking, is relevant for general linguistics, being an additional factor pertaining to the syntax/morphology interface, which can even be considered as a complex web of parameters embedded in syntax, pragmatics (SAP), morphology and lexicon.

3.2.1. Subjective agreement patterns for IC 1

The so-called subjective version expresses subjects acting on their own bodies or performing the verbal act for their own selves. Only two-personal transitive verbs have this form of version. Examples: v-**i**-ban t'ans/p'irs 'I wash my body/face', v-**i**-varcxni tmas 'I comb my hair', v-**i**-recxav t'ansacmels 'I wash my clothes'. Only two-personal transitive verbs with the third person direct object (singular or plural) can show the subjective version, with xat'av 'paint' as the main stem formative.

Here, unlike in the objective stem inflection, morphosemantic features (i.e. TAM parameters, parsed into series or screeves) dominate morphosyntactic ones (i.e. person and number, merged with the stem). Again, RSC rank (i) to (iv) in (11), with a clear declivity from morphosyntactic stems ($\mathbf{X_1}$ ixat'av and $\mathbf{X_2}$ exat'), with version vowels i- and -e, to more lexical stems ($\mathbf{X_3}$ xat', in fact accounting for the lexical root) and $\mathbf{X_4}$ xat'av, unmarked for version, and with extended stem, with the "transitive" increment -av. Moreover, the ranking of allomorphes, from X_1 to X_4, suggests a nice scaling effect of

the syntax/pragmatics on the one hand, and morphology/lexicon interface on the other hand, as the stems in (11_i) **i**xat'av and (11_{ii}) **e**xat', triggering version vowels, can be considered as more dependent on the former, while the stems in (11_{iii}) xat' and (11_{iv}) xat'av depend more on the latter.

(11) RSC for lexeme xat'av 'paint' (root XAT'): subjective patterns

(i) $RSC_{(IC\ 1)}$: Stem X_1 (⟨**ixat'av**, σ {A: {Perfect}⟩)

(ii) $RSC_{(IC\ 1)}$: Stem X_2 (⟨**exat'**, σ {A: {Pluperfect}, M: {Subjunctive & Perfect}⟩)

(iii) $RSC_{(IC\ 1)}$: Stem X_3 (⟨**xat'**, σ {T: {Aorist}, M: {Optative}⟩)

(iv) $RSC_{(IC\ 1)}$: Stem X_4 (⟨**xat'av**, σ {T & A: { }⟩)[16].

Concerning RE, we will briefly point out the main trends in this IC, refering to previous paradigms. The suffixes for subject agreement converge with patterns already observed for the regular intransitive verb imaleb above. The preverbal patterns are partly isomorphic with the behavior of the series for intransitive verbs too: series I/a (Present screeves) do not trigger preverbation, whereas series I/b (Future screeves) do. However, unlike for imaleb, preverbation is optional for series II (Aorist and Optative) here; otherwise, it is generalized in series III (Perfect), as for imaleb.

For person agreement, unlike intransitive imaleb, it has the strong grade PN, and the morphosemantically experiencer prefixes. At RSC level, note that this verb shows the version vowel -e- in series III. Nevertheless, Table 5.1–4 only provides an incomplete picture of IC 1 conjugation, as it only takes into account 3rd person direct object cells, while this verb accepts 1st and 2nd person direct objects (the +SAP cells) as well. Below in Table 5.5. and Table 5.6. this complexity is partially taken into account.

Table 5.1. Present Subseries: I/a, lexeme xat'va[17] 'to paint'

Screeve	**Present Indicative**	**Imperfect**	**Present Subjunctive**
Subject	'I paint'	'I was painting'	'If I paint'
1 sg	vxat'av	vxat'avdi	vxat'avde
2 sg	xat'av	xat'avdi	xat'avde
3 sg	xat'avs	xat'avda	xat'avdes
1 pl	vxat'avt	vxat'avdit	vxat'avdet
2 pl	xat'avt	xat'avdit	xat'avdet
3 pl	xat'aven	xat'avdnen	xat'avdnen

Table 5.2. Future Subseries: I/b, lexeme xat'va 'to paint'

Screeve	**Future Indicative**	**Conditional**	**Future Subjunctive**
Subject	'I'll paint'.	'I would paint'	'If I'll paint'
1 sg	davxat'av	davxat'avdi	davxat'avde
2 sg	daxat'av	daxat'avdi	daxat'avde
3 sg	daxat'avs	daxat'avda	daxat'avdes
1 pl	davxat'avt	davxat'avdit	davxat'avdet

[16] The density of occurrences is as follows: one screeve for the perfect (series III), two screeves for the pluperfect and perfect subjunctive (series III), two for the aorist and optative (series II), six screeves for all cells in series I/a-b (present and future, indicative and subjunctive), making the *-xat'av-* item a kind of default stem covering a wide collection of paradigms, whereas the primary root is nested in series II.

[17] Note that the participial form of the 'infinitive' (or, more properly, the mazdar) undergoes syncope, as a MPR. This fact deserves to be noted at this stage of the analysis but nothing more.

2 pl	daxat'avt	daxat'avdit	daxat'avdet
3 pl	daxat'aven	daxat'avdnen	daxat'avdnen

Table 5.3. Aorist Series: II, lexeme xat'va 'to paint'

Screeve	**Aorist Indicative**	**Optative**
Subject	'I painted/I have/had painted'	'If I would paint'
1 sg	(da)vxat'e	(da)vxat'o
2 sg	(da)xat'e	(da)xat'o
3 sg	(da)xat'a	(da)xat'os
1 pl	(da)vxat'et	(da)vxat'ot
2 pl	(da)xat'et	(da)xat'ot
3 pl	(da)xat'es	(da)xat'on

Table 5.4. Perfect Series: III, lexeme xat'va 'to paint'

	Perfect	**Pluperfect**	**Perfect Subjunctive**
	'It seems I've painted (it)'	"I'd paint (it)'	'I wish I would paint (it)'
1 sg	(da)mixat'avs	(da)mexat'a	(da)mexat'os
2 sg	(da)gixat'avs	(da)gexat'a	(da)gexat'os
3 sg	(da)uxat'avs	(da)exat'a	(da)exat'os
1 pl	(da)gvixat'avs	(da)gvexat'a	(da)gvexat'os
2 pl	(da)gixat'avt	(da)gexat'at	(da)gexatot
3 pl	(da)uxat'avt	(da)exat'at	(da)exat'ot

In contrast, in the objective version the patient is merged within the stem, morphosyntactic features climbing therefore as high in the paradigm function hierarchy as the RSC level[18] –again, an interesting fact from the standpoint of the syntax/morphology/lexicon interface.

Here, root XAT' 'paint' associated with the derivational stem suffix -av, as a thematic marker, gives a neutral stem $\mathbf{X_0}$: xat'av (i.e. lexical stem), which subsequently expands into a set of secondary objective (inflectional) stems $\mathbf{X_{0\text{-}3}}$, as shown below in the RSC set, embedded in the lexical component, as objectal stem allomorphy. One should remember here that stem $\mathbf{X_0}$: xat'av has already been considered above as a default stem (taking no less than six inflectional subsets for the subjective inflection patterns). Here, morphosyntactic features (i.e. person and number) dominate morphosemantic ones (i.e. TAM screeves).

3.2.2. Objective agreement patterns for IC 1

In this cycle of RSC application, it is as if the subset of prefixal object agreement RE (i.e. AGRO markers) were merging with a robust, unique, default stem, as in (12.1). Expansion now takes place to the left for objectal marking, while subject marking applies parsimoniously. This paradigm modeling is even more interesting, as it now makes it possible to extract a basic set of simplex (i.e. parsimonious) subject agreement (AGRS) suffixes –compare data in Table 5.5 with RSC and RE

[18] See Samvelian 2008, for a PFM analysis of the *Mordvin Definite Objective Conjugation*, which also shows object agreement (AGRO) at RSC level, with *-sa-/-si (*for O3 & partly 1) and *-ta-* (for O2 & 5) infixes at the level of lexical allomorphy (Samvelian, 351–354), as a first block of what she calls "Representational Rules" (RR). In a subsequent cycle of what the author calls RR, applied to a second block, a composite set of specific S > O rules (RE in our terminology) is implemented in the grammatical component. See Léonard (2008) for an etymological and diachronic account of the intricate Mordvin system of objective inflection.

concatenative strategies in Table 5.6, below. Some examples with traditional segmentation are given in (12.2), whereas the same examples in (12.3) apply our proposal of object markers merging into RSC items, to make the interpretation of the tables more concrete.

(12.1.) RSC for lexeme xat'av 'paint' (root XAT'): objective agreement patterns:
(i) $RSC_{(IC\ 1)}$: Stem X_0 (⟨**xat'av**, σ {AGRO 3, NUM SG & PL}⟩)
(ii) $RSC_{(IC\ 1)}$: Stem X_1 (⟨**mxat'av**, σ {AGRO 1, NUM SG}⟩)
(iii) $RSC_{(IC\ 1)}$: Stem X_2 (⟨**gxat'av**, σ {AGRO 2, NUM SG & PL }⟩)
(iv) $RSC_{(IC\ 1)}$: Stem X_3 (⟨**gvxat'av**, σ {AGRO 1, NUM PL}⟩).

Table 5.5. Direct object agreement stems. IC 1 xat'va 'to paint'

S > O	O1 sg	O2 sg	O3 sg	O1 pl	O2 pl	O3 pl
S1 sg	–	gxat'av	vxat'av	–	gxat'avt	vxat'av
S2 sg	mxat'av	–	xat'av	gvxat'av	–	xat'av
S3 sg	mxat'avs	gxat'avs	xat'avs	gvxat'avs	gxat'avt	xat'avs
S1 pl	–	gxat'avt	vxat'avt	–	gxat'avt	vxat'avt
S2 pl	mxat'avt	–	xat'avt	gvxat'avt	–	xat'avt
S3 pl	mxat'aven	gxat'aven	xat'aven	gvxat'aven	gxat'aven	xat'aven

(12.2) Intricate exponence in cross-references S > O patterns
v-xat'av-t 'we paint it'
S1-paint-Spl:Osg
g-xat'av-t '(s)he paints you_{pl}' S3:O2-paint-Opl
g-xat'av-t 'we paint you_{pl}'.
O2-paint-S1pl:Opl

(12.3) Simplex exponence in cross-references S > O patterns, out of AGRO & RSC merging
(a) v-xat'av-t 'we paint it'
S1-paint-$pl_{\neg 3}$
(b) gxat'av-t '(s)he paints you'
O2:paint-&$Opl_{\neg 3}$
(c) gxat'av-t 'we paint you_{pl}'.
O2:paint-S1&$Opl_{\neg 3}$

In (12.3), default patterns in PN relations are accounted for by the index $pl_{\neg 3}$, meaning that the exponent -t is the default plural agreement marker, except for 3pl. In (12.3a), Subject plural exponence for S1 naturally covers the suffixal domain in synthetic object agreement patterns. In (12.3b), 3sg has a default expression, and therefore does not surface as an exponent, while the plural object simply expands its number marking to suffixal exponence (described as &$Opl_{\neg 3}$). In (12.3c), the glossing S1&$Opl_{\neg 3}$ for suffixal exponence denotes portemanteau plural marking for both subject and object exponence. Thus, we now see how domains can overwrite or supersede items (i.e. exponence and templatic slots), through processes, as overlapping templatic slots. Hence, morphological representations gain in simplicity, making it possible to disentangle the IC system further.

Table 5.6. Object agreement RSC and RE items combining for IC 1 lexeme xat'av 'to paint'

S > O	1/O: X_1 = mxat'av	2/O: X_2 = gxat'av	3/O: X_0 = xat'av	4/O: X_3 = gvxat'av	5/O: X_2 = gxat'av	6/O: X_0 = xat'av
1 sg	–	< X_2 >□	< v X_0 >□	–	<X_2 t >□	< v X_0 >□
2 sg	< X_1 >□	–	< X_0 >□	< X_3 >□	–	< X_0 >□
3 sg	< X_1 s >□	< X_2 s >□	< X_0 s >□	< X_3s >□	<X_2 t >□	< X_0 s >□
1 pl	–	< X_2 t >□	< v X_0 t >□	–	<X_2 t >□	< v X_0 t >□
2 pl	< X_1 t >□	–	< X_0 t >□	< X_3t >□	–	< X_0 t >□
3 pl	< X_1 en >□	<X_2 en >□	< X_0 en >□	< X_3 en >□	< X_2 en >□	< X_0 en >□

The four RSC items X_0, X_1, X_2, and X_4, in Table 5.6 account for secondary object stems, which elegantly combine with a subset of AGRS suffixes 3 sg -s, 2 pl -t, 3 pl -en. These X lexical allomorphs include the object markers, through cyclical application of concatenative stem formation rules. In fact, we could also proceed horizontally in presenting the data, so that RSC would include the subject markers. Nevertheless, we prefer this top-down tabular disposition for the description of object marking. It enhances how the markers of subject and object meet in prefix position, regularly giving the advantage to object markers, as in the other object conjugation systems mentioned above. In Table 5.6 the third and last columns are roughly similar. Overall, there are 18 forms, as X_{2c} <X_2 t >□ repeats itself several times, paving the way for some local syncretism. In the first column four RE appear. This can be considered as the first sub-block of transitive/object paradigm functions. Subsequent columns follow the same logic of templatic combinatorics; (13) gives a sample of TRE modeling of this state of affairs.

(13) Templatic patterns (TRE): object inflection for the lexeme xat'va 'to paint' (root XAT'): subjective patterns for the O1 paradigm
X_1 = (O1<=> m, R<=> xat', Th <=> av) = (-2, 0, 2) = ⟨< mxat'av, σ >⟩
$TREI_1$ = □< X_1 > □□□□= ⟨< mxat'av, σ >⟩
$TREI_2$ □□< X_1 s > □□□□□(X_1{S3}<=>s) = [X_1 7] = ⟨< mxat'avs, σ >⟩
$TREI_3$ □□< X_1 t > □□□ (X_1{S2Pl}<=>t) = [X_1 8] = ⟨< mxat'avt, σ >⟩
$TREI_2$ □□< X_1 en > □□□ (X_1{S3Pl}<=>en) = [X_1 7/8] = ⟨< mxat'aven, σ >⟩.

Indirect or benefactive paradigms ('I paint it for you', 'you paint for me', etc.) follow similar patterns, although inserting version vowels at RSC level. One of the lessons we learn from these two IC 1 paradigms in (11) and (12) is that inflectional merging applies cyclically, including morphosyntactic domains such as slot -2, which incorporates in stems, at RSC level. This cyclicity makes the system simpler to analyze, and hints at ergonomic pressures to reach a balance between stems and exponents – a balance harder to fathom using more traditional approaches to Georgian grammar. Our approach also highlights the intricacy of the combinatorics at the syntax/morphology interface. Indeed, the surface stems for the objective cross-reference paradigms are less directly bound to the lexicon, and appear to be determined by the syntax/morphology interface. Let us now turn to an even more challenging set of paradigms in terms of component interfaces: IC 3, the so-called Medio-Active verbs.

3.2.3. Inflectional Class 3: Medio-Active verbs

According to traditional Georgian grammar, medio-active verbs in the IC 3 are verbs having the form of active-transitive verbs, but without any direct object. This IC is highly interesting for our

attempt to desintangle the intricacy of component interfaces. Lexical pairs like goravs/**u**gor**eb**s ‘rolls’ or du□s/**u**du□□**eb**)s ‘boils’ (see below) show the same mechanisms (version prefix, thematic suffixes, etc.) at work to express a change of voice. The TAMV complex (V standing for grammatical Voice, or diathesis) is the main issue at stake here. Compare active vs. medio-active derivation outputs, with three subsets of stem formation:

A.	xat’avs	(paints – active)			goravs	(‘rolls’ – medio-active)
	c’ers	(writes – active)			du□s	(‘boils’ – medio-active)
B.	active	agorebs	(S., O.d.)	–	ugorebs	(‘rolls’ S., O.d., O.indr.)
	medio-active	goravs	(S.)	–	ugoravs	(‘rolls’ S., O.indr.)
	active	adu□ebs	(S., O.d.)	–	udu□ebs	(‘boils’ S., O.d., O.indr.)
C.	medio-active	du□s	(S.)	–	udu□s	(‘boils S., O.indr.)
	active	agorebs	(S., O.d.)	–	ugorebs	(‘rolls’ S., O.d., O.indr.)
	medio-active	gordeba	(S.)	–	ugordeba	(‘rolls’ S., O.indr.)
	medio-active	goravs	(S.)	–	ugoravs	(‘rolls’ S., O.indr.)
	active	adu□ebs	(S., O.d.)	–	udu□ebs	(‘boils’ S., O.d., O.indr.)
	medio-active	du□deba	(S.)	–	udu□deba	(‘boils’ S., O.indr.)
	medio-active	du□s	(S.)	–	udu□s	(‘boils’ S., O.indr.).

To illustrate our tentative PFM modeling of Georgian verb inflections, we will now examine the conjugation of primary IC 3 medio-active verbs (such as t’irili ‘to cry’), taking at least two paradigms into account: one-person (S) and two-person forms (S, O.d or indr.). Further intricacy is to be expected, and the PFM model must be adapted to keep pace with this new increase in complexity. We therefore compress RSC, indexing series/screeves along with the IC indices. Such formal representations turn out to be more parsimonious than the previous ones, and privative descriptions (indicated by the symbol ⌐, standing for “to the exclusion of”) avoid having recourse to default class brackets (see 14):

(14) Main stems from Root: T’IR ‘to cry’, IC 3

(i) $RSC_{III:bp⌐PerfInd(IC\ 3)}$: Stem X_1 (⟨**et’ireb**, σ⟩)

(ii) $RSC_{I/a:mp(IC\ 3)}$: Stem X_2 (⟨**t’ir**, σ⟩)

(iii) $RSC_{I/b:bp\&III,Perf/bp⌐SAP(IC\ 3)}$: Stem X_3 (⟨**ut’ireb**, σ⟩)

(iv) $RSC_{I/a:bp\&IIbp\&III,Perf/mp⌐SAP(IC\ 3)}$: Stem X_4 (⟨**ut’ir**, σ⟩)

(v) $RSC_{II\&III:mp(IC\ 3)}$: Stem X_5 (⟨**it’ir**, σ⟩)

(vi) $RSC_{I/b:bp,\ IIIPerf(IC\ 3)}$: Stem X_6 (⟨**it’ireb**, σ⟩).

Now that the powerful and consistent incidence of TAM series has been sufficiently described, we account for RSC in a more parsimonious way in (14), and raise the basic paradigms as categorical specifications of each RSC. For instance, a RSC such as (14–i) can be described as $RSC_{III/bp⌐PerfInd(3)}$: Stem X_1 (⟨et’ireb, σ⟩), which reads as follows: for bipersonal paradigmatic functions ($_{bp}$), RSC applying to the third series ($_{III}$) will have the stem et’ireb as the realization of the corresponding lexeme (root t’ir), except in the perfect indicative ($_{⌐PerfInd}$) for inflectional class 3 ($_{IC\ 3}$).

Ranking of the declarative set of RSC is not random: again, it goes from restricted to wide occurrence (two screeves for et’ireb, three screeves for t’ir vs. six screeves for it’ireb, etc.). IC 3 is so sensitive to morphosemantic constraints that the smooth declivity between morphosyntactically driven

version stems (et'ireb, ut'ireb, it'ir, ut'ir) and lexical primary stems (i.e. lexical roots such as t'ir) or secondary stems (such as inversionless t'ireb, interestingly enough, not attested), is not as obvious as it was before, with IC 1 and 2.

Table 6.1. Present Subseries: I/a. Root T'IR 'cry', stem **(i/u)t'ir**

	Present Indicative		Imperfect		Present Subjunctive	
	Ex. 'I cry/am crying'		'I was crying'		'If /I wish I were crying'	
	Monopers	Bipers	Monopers	Bipers	Monopers	Bipers
1 sg	vt'iri	vut'iri	vt'irodi	vut'irodi	vt'irode	vut'irode
2 sg	t'iri	ut'iri	t'irodi	ut'irodi	t'irode	ut'irode
3 sg	t'iris vt'irit	ut'iris	t'iroda	ut'iroda	t'irodes	ut'irodes
1 pl	t'irit	vut'irit	vt'irodit	vut'irodit	t'irodet	vut'irodet
2 pl	t'irian	ut'irit	t'irodit	ut'irodit	vt'irodet	ut'irodet
3 pl		ut'irian	t'irodnen	ut'irodnen	t'irodnen	ut'irodnen

Examples in (15) illustrate a few cells in the paradigms above, opposing monopersonal (mp) PF to bipersonal (bp): in (15a), 3sg Pres Ind monopersonal t'iris stands for an adverbial causative sentence, with the reflexive pronoun tavis: '(s)he cries out of his/her own unhappiness"; in (15b), with 3sg Pres Ind bp ut'iris the agent (a child) cries over someone (his mother). The version vowel here plays a strategic role in differentiating valency.

(15a)

is	**t'ir-i-s**	tavis-i	ubedob-is	gamo.
(s)he	cry-M-S3sg	her/his own-NOM	unhappiness-GEN	because

'(S)he cries because of her/his own unhappiness'.

(15b)

am	kal-s	bavšv-i	**ut'ir-i-s**	saxl-ši.
this	woman-DAT	child-NOM	VER:cry-M- S3sg	house-in.

'The child of this woman is crying /cries at home'.

In the future indicative, thematic markers appear and the prefix i- produces three rows of the mq'opadi group in one-person verbs, while the prefix u- produces the two-person verb forms.

Table 6.2. Future Subseries: I/b. Root T'IR 'cry', stem **(i/u)t'ireb**

	Future Indicative		Conditional		Future Subjunctive	
	Ex. 'I will cry'		'I used to cry / if I cry'		'If I would cry'	
	Monopers	Bipers	Monopers	Bipers	Monopers	Bipers
1 sg	vit'ireb	avut'irdebi	vit'irebdi	avut'irdebodi	vit'irebde	avut'irdebode
2 sg	it'ireb	aut'irdebi	it'irebdi	aut'irdebodi	it'irebde	aut'irdebode
3 sg	it'irebs	aut'irdeba	it'irebda	aut'irdeboda	it'irebdes	aut'irdebodes
1 pl	vit'irebt	avut'irdebit	vit'irebdit	avut'irdebodit	vit'irebdet	avut'irdebodet
2 pl	it'irebt	aut'irdebit	it'irebdit	aut'irdebodit	it'irebdet	aut'irdebodet
3 pl	it'ireben	aut'irdebian	it'irebdnen	aut'irdebodnen	it'irebdnen	aut'irdebodnen

In series II, the subject of the medio-active verb shows ergative agreement, as the subject of a transitive verb.

Table 6.3. Aorist Series: II. Root T'IR 'cry', stem **(i/u)t'ir**

	Aorist Indicative		Optative	
	'I cried'		Ex. 'I (must/want to/can) cry'	
	Monopers	Bipers	Monopers	Bipers
1 sg	vit'ire	avut'irdi	vit'iro	avut'irde
2 sg	it'ire	aut'irdi	it'iro	aut'irde aut'irdes
3 sg	it'ira	aut'irda	it'iros	avut'irdet
1 pl	vit'iret	avut'irdit	vit'irot	aut'irdet
2 pl	it'iret it'ires	aut'irdit	it'irot	aut'irdnen
3 pl		aut'irdnen	it'iron	

As medio-active verbs follow the same conjugation model as transitives (in other words active verbs), in this series they show inversion just like transitive verbs. The thematic marker also appears in this case.

Table 6.4. Perfect Series: III. Root T'IR 'cry', stem **(i/u/e)t'ireb/-(n)-**

	Perfect, evidential		Pluperfect		Perfect subjunctive	
	'It seems I cried'		'(If) I would cry'		'I wish I could cry'	
	Monopers	Bipers	Monopers	Bipers	Monopers	Bipers
1 sg	mit'irnia	avt'irebivar	met'irna	avt'irebodi	met'ir(n)os	avt'irebode
2 sg	git'irnia	ast'irebixar	get'irna	ast'irebodi	get'ir(n)os	ast'irebode
3 sg	ut'irnia	ast'irebia	et'irna	ast'ireboda	et'ir(n)os	ast'irebodes
1 pl	gvit'irnia	avt'irebivart	gvet'irna	avt'irebodit	gvet'ir(n)os	avt'irebodet
2 pl	git'irniat	ast'irebixart	get'irnat	ast'irebodit	get'ir(n)ot	ast'irebodet
3 pl	ut'irniat	ast'irebian	et'irnat	ast'irebodnen	et'ir(n)ot	ast'irebodnen

Given that the rules of exponence (RE) were fully described for the IC 2 verb imaleb 'hide (oneself)', we will only provide a single table to account for affixal patterns for the IC 3 verb. Once more, we see how stems generated in the RSC layer match morphosyntactic (i.e. person and number) and morphosemantic (i.e. TAM series) desinential patterns (i.e. endings). The overall image is somewhat complexified by the intricacy of monopersonal (mp) versus bipersonal (bp) stems and endings and, as for the IC 1 above, a clear-cut contrast between two sets of person agreement: the subjective and morphonologically weak set of PN markers (slot -2) for series I–II versus the objective or oblique strong set of PN circumfixes for series III. Our initial survey of an irregular verb prepared us for the desinential contrasts, confirming the relevance of Pāṇini's rules for tackling a complex inflectional system, since irregular paradigms are prone to complex mirror inflectional patterns in languages, as a kind of exemplary realm of paradigms, as compared to regular inflectional classes.

Table 6.5. IC 3 Root T'IR 'cry': stems and affixes

Screeves Series	**Screeves**		
I/a	PRESENT RSC_{mp}: **t'ir** RSC_{bp}: **ut'ir** RE: v– -i, -i, -is, v– -it, -it, -ian	IMPERFECT RSC_{mp}: **t'ir** RSC_{bp}: **ut'ir** RE: v– -odi, -odi, -da, v– -odit, -odit, -odnen	SUBJUNCTIVE PRS RSC_{mp}: **t'ir** RSC_{bp}: **ut'ir** RE: v– -ode, -ode, -des, v– -odet, -odet, -odnen
I/b	FUTURE INDICATIVE RSC_{mp}: **it'ireb** RSC_{bp}: **ut'ireb** RE: v-, -s, v– -t, -t, -en	CONDITIONAL RSC_{mp}: **it'ireb** RSC_{bp}: **ut'ireb** RE: v– -di, -di, -da, v– -dit, -dit, -dnen	SUBJUNCTIVE FUTURE RSC_{mp}: **it'ireb** RSC_{bp}: **ut'ireb** RE: v– -de, -de, -des, v– -det, -det, -dnen
II	AORIST RSC_{mp}: **it'ir** RSC_{bp}: **ut'ir** RE: v– -e, -e, -a, v– -et, -et, -es	OPTATIVE RSC_{mp}: **it'ir** RSC_{bp}: **ut'ir** RE: v– -o, -o, -os, v– -ot, -ot, -on	
III	PERFECT $RSC_{mp/SAP}$: **it'ir** (or **it'irn**) $RSC_{–SAP}$: **ut'ir** RE: m– -nia, g– -nia, -nia, gv– -nia, g– -niat, -niat $RSC_{bp\&SAP}$: **it'ireb** $RSC_{bp\&–SAP}$: **ut'ireb** (or **itirebi/ut'irebi)** RE: m-_ia, g_-ia, -ia, gv-_ia, g-_iat, -iat	PLUPERFECT RSC_{mp}: **et'ir** (or **et'irn**) RSC_{bp}: **et'ireb** (or **et'irebin**) RE_{mp}: m– -na, g– -na, -na, gv– -na, g– -nat, -nat RE_{bp}: m– -ina, g– -ina, -ina, gv– -ina, g– -inat, -inat	SUBJUNCTIVE PERFECT RSC_{mp}: **et'ir** RSC_{bp}: **et'ireb** (or **et'irebin**) RE_{mp}: m– -(n)os, g– -(n)os, -(n)os, gv– -(n)os, g– -(n)ot, -(n)ot RE_{bp}: m– -inos, g– -inos, -inos, gv– -inos, g– -inot, -inot

The more we progress along the trail of inflectional classes in Standard Georgian, the more we see the interplay of version vowels i-, u-, e- (slot -1 in the template), and thematic TAMV and valence increments (slot +2). Table 6.5 highlights this intricacy of RSC well-formedness strategies, between monopersonal and bipersonal stems (the former having more primary forms, whereas the latter develop secondary patterns, following one more cyclic step of paradigm function building). It also reveals patterns of competing exponents in the RE component, especially in series III, between the two sets of valency, with diversification of monopersonal and bipersonal suffixal chains – the latter inserting a default desinential suffix -i- from slot +5. This, again, confirms the strong trend of this series to innovate and diversify in the system, partly for diachronic reasons, partly because of its high sensitivity to semantics and pragmatics (perfective aspect and evidentiality, strongly anchored in discourse and speech acts) – once more, a question of interface between formal components of the

grammar, in interaction with the referencial field. IC 4 of Medio-Passive verbs will further highlight this trend, in the next section.

3.2.4. Inflectional Class 4: Medio-Passive verbs

Medio-passives make up IC 4 – so complex a lexical and inflectional class that Marcello Cherchi dedicated a substantial essay to its exploration and modeling (Cherchi, 1999a). Here, grammatical voice, from the TAMV complex, plays as subtle a role as argument structures, since these verbs use the same forms as passive verbs (as opposed to medio-actives, from IC 3). To clarify what kind of lexical items may be concerned, let us mention among medio-passive verbs dgas 'stands', zis 'sits', c'evs 'lies', ʒevs 'it (thing) lays', sʒinavs 'sleeps', uq'vars 'loves', sʒuls 'hates', šurs 'is jealous', sc'adis 'wants', surs 'wishes', šia 'is hungry', sc'q'uria 'is thirty', akvs 'has', □irs 'costs', h□viʒ'avs 'is awakening', axsovs 'remembers', hgavs 'looks like', bnela 'it's dark', cxela 'it's hot', grila 'it's cool'.

There are two groups of medio-passives. The verbs in the **A-group** have only four rows in the I series (i.e. screeves I/a-b), but they have all the II series forms. The verbs in the **B-group** are defective, as they do not have the II series forms – once more, a very interesting fact from the standpoint of general linguistics, being a kind of morphosemantic neutralization of a set of cognitive and perceptive verbs. Instead, they display most of the series I screeves, notably I/b (the future series). The diversity of stem allomorphs culminates here, as we'll see, with no less than 8 stems for the IC 4 A class, as presented below. This confirms the tendency to complexification correlated with the intensification of interactions between the morphosemantic component and the syntax/morphology/lexicon interface. In (16), this trend reaches a climax.

3.2.4.1. The subclass IC 4 A

Interestingly, RSC in this IC reveal complex patterns, namely the morphosemantic-to-lexical drift already observed in lexeme classes: the narrower competitors (X_1 and X_2) belong to a defective series (I/a, only PRSInd). Much suppletivism occurs across stem subsets: (u)c'ev- in $X_{1\text{-}2}$, underived and in full prosodic grade or ic'veb/ec'veb ($X_{7\text{-}8}$) incremented and in the zero grade, as compared to c'ol(il) in $X_{3\text{-}4}$, and ic'ek/ec'ek in $X_{5\text{-}6}$. The number of competing stems is so high (no fewer than eight items), that we can say the system is undergoing strong conflicting pressures for well-formedness (see RSC in 16):[19]

(16) Main stems for C'EV 'to lie': IC 4

(i) RSC $_{\text{I/a:mp, PRSInd.(IC 4A)}}$: Stem X_1 (⟨**c'ev**, σ⟩)

(ii) RSC $_{\text{I/a:bp, PRSInd.(IC 4A)}}$: Stem X_2 (⟨**uc'ev**, σ⟩)

(iii) $\text{RSC}_{\text{III:bp(IC 4A)}}$: Stem X_3 (⟨**c'ol**, σ⟩)

(iv) RSC $_{\text{III:mp(IC 4A)}}$: Stem X_4 (⟨**c'ol**, σ⟩)

[19] The fact that we list no fewer than 8 stems for an IC 4A verb in Standard Georgian is not so uncommon in the World's languages: some lexemes may have as many as 7 or more inflectional allomorphs in many languages. Dubois' inflectional class taxonomy for Standard French for instance (Dubois, 1967) ranks *être* 'be' as IC 1 (instead of considering this verb as "irregular"; verbs with up to 5 or 6 stems such as IC 2 & 3: *faire* 'do', *aller* 'go', *pouvoir* 'can, be able to', *vouloir* 'want', *avoir* 'have'; verbs with 4 stems such as IC 4: *venir* 'come', *tenir* 'hold', *prendre* 'take', *valoir* 'be worth, match', etc. Nevertheless, Dubois' system (inspired by Martinet, 1948) is only based on inflectional RSC properties, regardless of the intricacy of derivational (in particular, participial such as infinitive) forms. In comparison, the Standard Georgian IC system is far more balanced in its smooth interplay between RSC and sets of RE. Indeed, IC 4 counts among the most diverse in terms of RSC, due to derivational patterns and version vowel alternations, as in (16) above.

(v) $RSC_{II:mp(IC\ 4A)}$: Stem X_5 (⟨**ic'ek**, σ⟩)
(vi) $RSC_{II:bp(IC\ 4A)}$: Stem X_6 (⟨**ec'ek**, σ⟩)
(vii) $RSC_{I/b:mp(IC\ 4A)}$: Stem X_7 (⟨**ic'veb**, σ⟩)
(viii) $RSC_{I/a:bp(IC\ 4A)}$: Stem X_8 (⟨**ec'veb**, σ⟩).

Moreover, probably sustaining this complexity in the number of optional stems, or making it possible through patterns of lexicalization, compounding with the copula (v-ar(-t), x-ar(-t), etc.) is a strikingly active process in TAMV series (i.e. screeves) from which it was absent in previous inflectional classes (namely, IC 1–3), as in series I/a PRSInd (e.g. for IC 2). In the same way as before in series III for IC 2, enclitic attributive auxiliarisation is overwhelming. This compounding strategy makes up this subclass 4A cluster with IC 2, as far as intransitivity is concerned. Predication is therefore on the rise, in this semantically very sensitive inflectional class.

A-group (c'ola 'to lie'); monopersonal vc'evar and bipersonal vuc'evar

Table 7.1. Present Subseries: I/a. Root C'EV 'lie', lexeme c'ola, stem **(u)c'ev**

	Present Indicative	
	Ex. 'I lie/am lying	
	Monopers	Bipers
1 sg	vc'evar	vuc'evar
2 sg	c'evxar	uc'evxar
3 sg	c'evs	uc'evs
1 pl	vc'evart	vuc'evart
2 pl	c'evxart	uc'evxart
3 pl	c'vanan	uc'vanan

The Imperfect and Present Subjunctive are missing, so that the paradigms are partly "defective". In the future indicative, the prefix i- produces one-person verb forms, and the prefix -e- produces two-person verb forms in the Future Indicative rows.

Table 8.2. Future Subseries: I/b. Root C'EV 'lie', lexeme c'ola, stem **(i/e)c'veb**

	Future Indicative		Conditional		Future Subjunctive	
	Ex. 'I will lie'		'I used to lie / if I lie'		'If I would lie'	
	Monopers	Bipers	Monopers	Bipers	Monopers	Bipers
1 sg	vic'vebi	vec'vebi	vic'vebodi	vec'vebodi	vic'vebode	vec'vebode
2 sg	ic'vebi	ec'vebi	ic'vebodi	ec'vebodi	ic'vebode	ec'vebode
3 sg	ic'veba	ec'veba	ic'veboda	ec'veboda	ic'vebodes	ec'vebodes
1 pl	vic'vebit	vec'vebit	vic'vebodit	vec'vebodit	vic'vebodet	vec'vebodet
2 pl	ic'vebit	ec'vebit	ic'vebodit	ec'vebodit	ic'vebodet	ec'vebodet
3 pl	ic'vebian	ec'vebian	ic'vebodnen	ec'vebodnen	ic'vebodnen	ec'vebodnen

II Series

Table 8.3. Aorist Series: II. Root C'EV 'lie', lexeme c'ola, stem **(i/e)c'ek,(i/e)c'v**

	Aorist Indicative		Optative	
	'I lay'		Ex. 'I (must/want to/can) lie'	
	Monopers	Bipers	Monopers	Bipers
1 sg	vic'eki	vec'eki	vic've	vec've
2 sg	ic'eki	ec'eki ec'va	ic've	ec've
3 sg	ic'va	vec'ekit	ic'ves	ec'ves
1 pl	vic'ekit	ec'ekit	vic'vet	vec'vet
2 pl	ic'ekit	ec'vnen	ic'vet	ec'vet
3 pl	ic'vnen		ic'vnen	ec'vnen

III Series

The monopersonal verbs in these screeves take the auxiliary verb q'opna 'to be' – var, xar, viq'o, viq'av, etc.

Table 8.4. Perfect Series: III. Root C'EV 'lie', lexeme c'ola, stem **c'ol(il)**

	Perfect, evidential		Pluperfect & Perfect subjunctive	
	'It seems I lay'		'(If) I would lie''I wish I could lie'	
	Monopers	Bipers	Monopers	Bipers
1 sg	vc'olilvar	vc'olodi	vc'oliliq'av	vc'olode
2 sg	c'olilxar	sc'olodi[20]	c'oliliq'av	sc'olode
3 sg	c'olila	sc'oloda	c'oliliq'o	sc'olodes
1 pl	vc'olilvart	vc'olodit	vc'oliliq'avit	vc'olodet
2 pl	c'olilxart	sc'olodit	c'oliliq'avit	sc'olodet
3 pl	c'olilan	sc'olodnen	c'oliliq'vnen	sc'olodnen

3.2.4.2. IC 4 B

Of course, this inherently polyvalent verb must appear as bipersonal in the tables. As a result, we obtain 44 cells. Although it looks compact, it is still incomplete, to avoid overloading the presentation. The RSC set is far simpler for a **4**B-group verb such as siq'varuli 'love', since only bipersonal constructions occur, and series II is defective. All stems are derived from the lexical root Q'VAR (17).

(si)q'var(ul)

(17a) Main stems for (si)q'var(ul) 'love': IC 4B

(i) RSC $_{I/a:(IC\ 4B)}$: Stem X_1 (⟨**uq'var**, σ⟩)

(ii) RSC $_{I/b(IC\ 4B)}$: Stem X_2 (⟨**eq'vareb**, σ⟩)

(iii) RSC$_{III:(IC\ 4B)}$: Stem X_3 (⟨**q'vareb**, σ⟩).

B-group (siq'varuli – love)

I Series;

Table 9.1. Present Subseries: I/a. Root Q'VAR 'love', lexeme siq'varuli, stem **uq'var**

Present Indicative	Imperfect	Present Subjunctive

[20] The *s*- prefix is a marker of 3 Ind. Obj.

	Ex. (s)he loves me'	'(s)he was loving me'	'If /I wish (s)he were loving'
	Bipers	Bipers	Bipers
1 sg	vuq'varvar	vuq'vardi	vuq'varde
2 sg	uq'varxar	uq'vardi	uq'varde
3 sg	uq'vars	uq'varda	uq'vardes
1 pl	vuq'varvart	vuq'vardit	vuq'vardet
2 pl	uq'varxart	uq'vardit	uq'vardet
3 pl	uq'vart	uq'vardnen	uq'vardnen

Table 9.2. Future Subseries: I/b. Root Q'VAR 'love', lexeme siq'varuli; I/b stem **eq'vareb**

	Future Indicative	Conditional	Future Subjunctive
	Ex. '(s)he will love me'	'(s)he used to loves me / if (s)he loves me'	'If (s)he would love me'
	Bipers	Bipers	Bipers
1 sg	veq'varebi	veq'varebodi	veq'varebode
2 sg	eq'varebi	eq'varebodi	eq'varebode
3 sg	eq'vareba	eq'vareboda	eq'varebodes
1 pl	veq'varebit	veq'varebodit	veq'varebodet
2 pl	eq'varebit	eq'varebodit	eq'varebodet
3 pl	eq'varebat	eq'varebodnen	eq'varebodnen

The II Series does not exist for this conjugation. Here, we face an important gap due to defectivity, which is one more hint in our quest to fathom the general economy of the (apparent) complexity of the system.

III Series

Table 9.3. Perfect Subseries: III. Root Q'VAR 'love', lexeme siq'varuli, q'vareb

	Perfect, evidential	Pluperfect	Perfect subjunctive
	'It seems (s)he loves me'	'(If) (s)he would love me'	'I wish (s)he could love me
	Bipers	Bipers	Bipers
1 sg	v(h)q'varebivar	vq'varebodi	v(h)q'varebode
2 sg	hq'varebixar	hq'varebodi	hq'varebode
3 sg	hq'varebia	hq'vareboda	hq'varebodes
1 pl	v(h)q'varebivart	v(h)q'varebodit	v(h)q'varebodet
2 pl	hq'varebixart	hq'varebodit	hq'varebodet
3 pl	hq'varebiat	hq'varebodnen	hq'varebodnen

Full congujation for the lexeme siq'varuli, with cross-referenced arguments (agent/patient) and one additional RSC (17b):

(17b) Additional stems from cross-referenced pronominal inflection (IC 4B):
(iv) RSC $_{\text{I/a, +SAP:(IC 4B)}}$: Stem X_4 (⟨**iq'var**, σ⟩)

Here we could apply, as we did previously for IC 1 verbs, an objectal stem cycle of RSC (as in 12.1 above). However, we will not enter into these details, for the sake of concision. In (18a-c), we nevertheless provide a few morphosyntactic examples to contextualize the mq'varebia cells for S/O1sg:love:th-M:S3sg (Perfect), giq'var-de for S/O2sg:VersO:love-Imperf:M (Fut. Subj.), miq'var-s, for S/O1sg:VersO:love-S3sg (PRS. Ind.), and make more explicit the implementation of these complex agreement patterns on verbal forms.

(18a) me arasodes mq'vareb-ia es msaxiob-i.
I never S/O1sg:love:th-M:S3sg (Perfect) this actor-NOM
'I never loved this actor'.

(18b) rom giq'var-de, ama-s ar it'q'-od-i.
if S/O2sg:VersO:love-Imperf:M (Fut. Subj.) this-DAT NEG VER/S:say:Imperf.-M (Cond.)
'If you loved me you wouldn't say this'.

(18c) ar miq'var-s am kveq'n-is gazafxul-i.
NEG S/O1sg:VER/O:love-S3sg (PRS. Ind.) this country-GEN spring-NOM
'I do not love the spring in this country'.[21]

The survey of criteria accounting for IC taxonomy in Standard Georgian, and for the intricate, yet paradoxically simplex set of combinatory constraints or rules is now complete. We resolved many methodological problems in modeling an accurate and, to the extent possible, a comprehensive overall picture of the many paradigm functions available in series (screeves) and valency classes in this inflectional system. Yet we still face challenging issues, especially as far as exemplarity is concerned: despite having chosen relevant lexemes and paradigms in order to examine the IC system, our approach is still qualitative above all. The next step forward would consist in implementing a quantitative approach to a comprehensive set of verbs, and to define the intricacy of subclasses.

IC 4 is particularly interesting given the strong incidence of the enclitic inflected copula, which competes and combines with variably complex arrays of allomorphic stems, thereby highlighting the persistent role of predication forms for TAMV series III as well as for morphosemantic correlates of verbs of position, cognition and perception.

4. Conclusion and further prospects

In section 1.1, we asked a set of questions, such as how do the units generated in the three components defined as RSC, RE and MPR, which apply to any inflectional system, select and/or combine the various units available in the verbal template, as shown in Tables 1.1-3? Examined in the light of the "screeves" of TAMV series I-III, the Georgian verb stem allomorphy brings to mind the process of developing black and white photographs by exposing silver halide emulsion to images in a dark room, before digital photography.

[21] Of course, established segmentation would be as follows : (18a) *me arasodes m-q'var-eb-i-a es msaxiob-i*: I never O1sg-love-TH-M-S3sg this actor-NOM; (18b) *rom g-iq'var-d-e, ama-s ar i-t'q'-od-i*: if O2sg-VER/O-love-Imperf-M this-DAT NEG VER/S-say-Imperf-M 'If you loved me you wouldn't say this', and (18c) *ar m-i-q'var-s am kveq'n-is gazafxul*-i: NEG O1sg-VER/O-love-S3sg this country-GEN spring-NOM.

It also confirms the validity of the "Screeves & Series" model elaborated by Georgian grammarians, as shown in Table 2. The "lessons" of Georgian verb taxonomy, for General Morphology as part of General Linguistics, are the following: in this system, tense dominates aspect, and is divided into {□ Present, □ Past} parameters, on which mood subsets depend (e.g. series I/a = the "Present series", series I/b, the "Future series", etc.). The feature {Past}, activated in series II, is strongly equipollent with series I, and has a strong incidence on the overall system, as it triggers split ergativity marking on sentence arguments. The perfect series (III) is organically linked to mood, through evidential/epistemic values, so that this system also shows the close interplay between Aspect and Mood, as a mixed A/M series. All these features are also available in the world's languages. But in Georgian, divisions are clear-cut, although interactions between morphosyntactic (PN marking), morphosemantic (TAMV stem inflection) and pragmatic (SAP asymmetry specification) make up a complex whole, the intricacy of which is better desintangled by a Word & Process model such as PFM. Here, theory brings much to this specific language, just as the language under scrutiny gives much back to Theory in return. In comparison, Romance languages also tend to distinguish between present and past blocks of RSC and RE, and present and past conjunctives. In Estonian, the -vad and -nud present plural and neutral perfect forms respectively, when used without the auxiliary be, receive an evidential/epistemic interpretation. In Zapotec,[22] verbal stems have prefixed voice-related vowel sets which can be compared, to some extent, to Georgian version vowels, etc. But all these systems have undergone much mingling and lexicalization of suppletive stems, blurring the primary divisions, and the margin of possible variation through interaction between the components mentioned above (morphosyntactic, morphosemantic and pragmatic). The originality of this TAM grid lies in its holographic interplay with argument structures, ergative/nominative/dative alignment, and the intricacy of version prefixation at RSC level, while still preserving clear-cut patterns through TAMV "screeves". Further questions arise, for future research: what combination of universally available parameters has a primary effect in the shaping of such a system? Does predication in TAMV series III and/or defective patterns for series II and III in the more complex IC make this overall "harmony" or "inflectional balance" possible, in terms of paradigmatic economy? Of course, we have focused here on the standard variety, but dialect variation should also be considered, and comparison of this overall inflectional balance with Old Georgian and with other Kartvelian languages (Zan languages, and Svan), would interestingly complete this picture – although the general shape of this system would not collapse: it would only become simpler or more intricate, depending on the variety or language under scrutiny.

Through our survey of Standard Georgian inflectional class taxonomy, based on regular verbs, we saw how these TAM and Valence effects – from the morphosemantic component of the grammar – combine cyclically with morphosyntactic features, in the interplay between RSC and RE. Once again, Pāṇini's rules highlight the covert hierarchy of TAM/Valence stems for RSC, and trends in stem stratification, from the lexical root, as a primary form, to more secundary or tertiary forms – more intercomponentially interactive, and more extended in scope within the morphological template. We identified at least four subsets of Person/Number/TAM agreement markers for RE, with no less than four sub-types (see Tables 4 and 6.5): some are sigmatic and consonantal, others are vocalic, or combine both marking strategies.

At the outset of this paper, we asked how these patterns could contribute to a general theory of inflectional class construction, and what the building blocks making up the IC were. The Georgian IC type, as illustrated by the data surveyed here seems to holographically combine derivation and inflection, as suggested in Tables 1.2–3. It clearly associates preverbation and version vowels with voice and valency, at lexical level (i.e. in the realm of RSC), whereas it processes other

[22] See Operstein & Sonnenschein (2015).

morphosemantic criteria such as TAM through clear-cut categories ruled by the Tense >> Mood >> Aspect hierarchy mentioned above. Morphosyntactic features partially use the same materials (especially preverbs) as the allomorphic sets of RE. Last, but not least, morphosyntactic features combine preferentially at RE level with RSC, but the non-subjectal values may be incorporated in the stems, as seen for IC 1. In fact, all these strategies compete within the inflectional space, and frontiers vary from one IC to another, between RSC and RE constraints. Despite this holographic and competitive field of paradigmatic interactions, RSC and RE remain fairly predictable and regular, and slot +4 seems to play a strong role in making lexemes and stem derivation consistent.

Nevertheless, the Georgian system is prone to double or multiple marking. Circumfixation of 1sg & pl person agreement is a good example of this trend, as we can also consider that valence and voice rely on several simultaneous slots, in close interaction with TAM values, as in the combination of preverbal slots for different IC (1 and 2), slot -1 for version markers, slot +4 for aspect & mood markers, and so on. Nevertheless, the basic tenets, opposing morphosyntactic and morphosemantic features, hold strongly, and they interfere beyond multiexponential and allomorphic strategies. In addition, a striking feature of at least Standard Georgian verb inflectional system lies in the scarcity of syncretic cells. Overall, the system is far more overt and simplex than it may seem at first sight.

All these typological traits point in one direction: Georgian qualifies as a key language for understanding universal principles for inflectional class formation, and how the lexicon interacts with grammar within syntax.[23] The way it manages to balance interactions between TAMV, Valency and Agreement marking through modular distribution of encoding strategies (i.e. parsing RSC and RE, with MPR gradation and elision rules) can further be highlighted by reductionist models such as PFM and other Word & Paradigm models, as attempted in this paper. This quest for simplex patterns in Georgian inflection should be pursued in other languages of the Kartvelian stock such as Mingrelian and Svan, from a holistic standpoint, taking all IC and irregular verbs into account, in the many dialects still available for exploration through fieldwork, or in the monographs and reference grammars available for these languages and their dialect networks.

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[23] See Tuite, 1998 for dialect variation within the inflectional system of Georgian, Topuria, 1931 and Tuite, 1997 and Margiani-Subari, 2012 for Svan.

[24] https://www.researchgate.net/publication/237530400_Paradigm_shape_is_morphomic_in_Nepali.

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Acknowledgments

This research was funded through the IDEX "Emergence" project, Sorbonne University (2017–18) Language Dynamics in the Caucasus (LaDyCa), see http://www.stih.paris-sorbonne.fr/?p=1203.

Abbreviations and symbols[25]

¬ Negation (excluding relation)

· Distributive relation, commutation (in routine agreement RE)

[25] In this article we use the Leipzig Glossing rules as much as possible, with exceptions however: if a category is not abreviated as such in the list (e.g. Aspect), or has an abreviation which overlaps with another one, specifically needed here (e.g. 'A' for "agent-like argument" of canonical transitive verbs cannot be used here, as it overlaps with 'A' for Aspect, in PFM declarative rows or in the acronym TAM in this paper), 'P' for Person, instead of Patient, etc. Other abreviations, such as 'AGRS', 'AGRO' for Agreement Subject or Object belong to already accepted conventions in specific fields of grammar, established long before the Leipzig Glossing rules.

⊕ Affixal concatenation (in RE representations)
x– -y Here the long hyphen – stands for the stem, in circumfix constructions
- The small hyphen stands for affixal segmentation (in raw data)
= clitic
° labial feature ($k^{\circ} = k^{w}$).
word boundary
A – Aspect
AG – Agent
AGRO – Object agreement
AGRS – Subject agreement
AUX – Auxiliary verb
bp, bipers – bipersonal
d – Direct
DAT – Dative
ERG – Ergative
EVID – Evidentiel
FP – Formal properties
GEN – Genitive
IC – Inflectional classes
IND – Indicative
Indr – Indirect
M – Mood
mp – monopersonal
MPR – Morphophonological Rules
M/P – Mood/Person marker (‘row marker’, in Georgian grammar)
NOM – Nominative
N, NUM – Number
OM – Object markers
O – object (direct)
COP – Copula
P – Person
PF – Paradigmatic Function
PFM – Paradigm Function Morphology
PRS –Present
PV, pv – preverb
P, Pers – person
Pl – Plural
PN – Person and/or Number
PV (PREV) – preverb
R – root
RE – Rules of Exponence
RR – Representational Rules
RSC – Rules of Stem Choice
S – Subject
SAP – Speech Act Participants
Sg – Singular
Th – thematic segment / formative
TRE – Templatic Rule of Exponence

SAP – Speech Act Participant
SM – subject markers
SP – Semantic properties
T – tense
TAM – Tense, Aspect, Mood
TAMV – Tense, Aspect, Mood & Voice
Th – Thematic marker (in stems)
VER – Version: VER/N neutral version, VER/O objective version, VER/S subjective version