1. THE ISSUE

A paradigm:

(1)

\[
\begin{array}{ccccccc}
X & Y & X & X & Y & X & X \\
+Y & +Y & +Y & -Y & -Y & -Y & -Y \\
\end{array}
\]

\(\Phi_1 \Phi_2 \Phi_3 \Phi_4 \Phi_5 \Phi_6 \Phi_7 \Phi_8\)

(2) A paradigm is the set of the morphological realizations of the contrastive features of a given terminal node of the morpho-syntax. Thus, \(\{\Phi_1, \ldots, \Phi_7\}\) is the paradigm formed by the features \(\{X, Y, Z\}\) in (1). (Calabrese)

(3) English InfI (simplified):

Tense (2 values)  Person (3 values)
Number (2 values)  => 12 cells

(4) a. The Paradigm (= Paradigm Space)

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
<th></th>
<th>Past</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Singular</td>
<td></td>
<td>Plural</td>
<td></td>
</tr>
<tr>
<td>1 psn</td>
<td>play</td>
<td>play</td>
<td>played</td>
<td>played</td>
</tr>
<tr>
<td>2 psn</td>
<td>play</td>
<td>play</td>
<td>played</td>
<td>played</td>
</tr>
<tr>
<td>3 psn</td>
<td>plays</td>
<td>play</td>
<td>played</td>
<td>played</td>
</tr>
</tbody>
</table>

b. VOCABULARY ITEMS - RULES OF EXPONENTE

\(-d \leftrightarrow \text{Past}\)

\(-z \leftrightarrow 3 \text{ws}\)

\(-\text{default / elsewhere}\)

The paradigm is a convenient device for representing information. Does the paradigm play any deeper role in grammatical theory?

Answer 1: No. The paradigm is epiphenomenal. Grammatical rules / principles / constraints are defined over features and exponents, with no direct reference to the paradigm.

Answer 2: Yes: Above and beyond the features and exponents; there are grammatical rules / principles / constraints that are defined over paradigms.

“If the paradigm (structure) has property P, then …”

(5) a. Paradigm Structure Constraints (Williams, Carstairs-McCarthy etc)


c. Consequences of the number of overt contrasts in a paradigm.

Pro-Drop: “Uniform” versus mixed paradigms.

Rich Agreement Hypothesis: “Morphology-Driven Syntax”: Cross-linguistic differences in verb-raising are explained by differences in the languages’ inflectional paradigms (influential in acquisition). (Rohrbacher 1999, see also Vikner 1997).

My contention:

The available evidence is compatible with “no paradigms”. Where the theories are empirically distinguishable, current proposals invoking the additional construct of paradigms make the wrong predictions.

Today: Part I - Williams’s 1994 theory of paradigms / syncretism

Part II - Paradigm Uniformity in Morphology (McCarthy)

(on Rohrbacher/Vikner, see <Bobaljik, 2002 #24992>)

Caveat: Since I am arguing for a negative thesis (no paradigms), the best that can be done is to go through the strongest examples offered to date and show that (how and why) they fail.

Caveat: In arguing about classes of theories on the basis of properties of particular theories, it is important to keep in mind that a criterion levied against a particular theory is not necessarily valid of the class of theories that it represents. I will try to carefully distinguish as we proceed where I am arguing against a particular theory from where I am arguing against a class of theories.

1.1 Meta-paradigms, or systematic patterns of syncretism

One answer: “the pattern of syncretism is a quite abstract structure, standing above particular words, particular rules, particular suppletive relationships.” (Williams 1994:26)

Williams’s point (cf. Andrea’s lecture):

The treatment in (4b) makes it an accidental property of the vocabulary item “-ed” that it happens not to show agreement distinctions. This misses a significant generalization: it is a general property of English (ignoring he) that there is no agreement in the past tense, regardless of the choice of vocabulary item (of which there are four: -n, “ed”=”[-d, -t, -d], -t, and -Ø).
(6) -n ꞏ PAST, PARTICIPLE / {list of verbs} \(^1\)
-t ꞏ PAST / {dwell\_}\_\_\_
-o ꞏ PAST / {beat\_} 
-ed ꞏ PAST 
-s ꞏ 3 SG
-o ꞏ default / elsewhere

(7) The past tense of dwell, which takes a phonologically unexpected -t, nevertheless respects the general syncretism pattern of English in that the tense marker is (a) unspecified for person/number, and (b) bleeds/blocks the 3sg agreement.

(8) Irregular verbs are regular. We don’t find (in English, excluding be):

* -t ꞏ PAST, 3PL {dwell\_}\_\_
-ed ꞏ PAST 
-s ꞏ 3 SG
-o ꞏ default / elsewhere

* yielding… They dwell, We dwelled, … (special form only in 3pl, past)

The claim amounts to saying that part of the grammar of English is the structure in (9) in addition to the various pieces that will fill the cells. Williams claims (in effect) that this structure is learned.

(9)

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singular</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>Plural</td>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>

An alternative representation of that knowledge (without paradigm structure):

(10) a. * [\^past, agreement ] (cf. Calabrese)

b. Impoverish person / number / \^past

Advantages: Generalization, rather than conspiracy among vocabulary items

No appeal to extrinsic ordering in (6).

\(^1\) The four affixes occur with and without triggering vowel (or other stem) changes, hence the two are logically distinct, see Halle & Marantz 1993, Noyer 1997, but see Burzio 2002.

Another example: in Russian (and German), no gender distinctions in the plural.

(11) Nominative pronouns: M. on on-i
    F. on-a on-i
    N. on on-i

(12) a. active features: b. vocabulary items: Halle 1997:428

- genders
- numbers
- -i ꞏ plural (or /y/)
- -a ꞏ feminine
- -o ꞏ neuter
- -Ø ꞏ elsewhere (“O” = yer)

At face value in Halle’s treatment, what blocks gender suffixes from surfaceing in the plural is an idiosyncratic property of the vocabulary item -i”—specifically, its position in the disjunctively ordered list.

But, it is a general property of Russian inflectional morphology that no matter how irregular the form gender is never distinguished in the plural.

(13) Accusative pronouns: M. jego ix
    F. jejo ix
    N. jego ix

(14) Adjectives (nominative): M. -yj -yje
    F. -aja -yje
    N. -oje -yje etc...

(15) The Russian Meta-Paradigm:

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masc</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Fem</td>
<td>B</td>
<td>D</td>
</tr>
<tr>
<td>Neut</td>
<td>C/A</td>
<td></td>
</tr>
</tbody>
</table>

These “meta-“paradigms constrain possible (inventories of) exponents in a language.

- Accepting that such static (non-predictive) patterns are to be explained by the theory, does the (descriptive) existence of (meta-)paradigms provide the right kind of evidence to distinguish among the competing families of theories?

- No.

(16) a. The effects of meta-paradigms can be captured/stated without reference to structure (i.e., without reference to paradigms).

English: *[person, number, \^past] Impoverish: Person/number \^Ø / past

Russian: *[gender, \^plural] (Greenberg)

Impoverish: Gender \^Ø / plural
b. The existence of meta-paradigms does not follow from the basic properties of either theory. Nevertheless, if there are UG restrictions that must be stated on meta-paradigms, that cannot be restated as impoverishment rules / markedness filters, these do have the potential to distinguish among the theory types; a paradigm-free theory such as DM has no way to state such restrictions.

1.1.1 Absolute vs. Contextual syncretism (aside)

These syncretisms are contextual, under Andrea’s criteria. Clearest for Russian:

Although no single vocabulary item ever has gender + plural, agreement is sensitive to both:

(17) (U menja) dv-e mladi-ix sestr-ý
At me two-fem.sg.nom younger-pl.gen sister-fem.sg.gen
‘I have two younger sisters.’

In other words, *[gender,plural] is language-wide (context-free), but constrains vocabulary insertion/exponence, but not the ‘grammar’ (agreement) of Russian.

1.1.2 Meta-paradigms without paradigms.

Williams’s theory of paradigms:


[Diagram]

“The terminal nodes are the actual cells of the paradigm. The starred nodes [nodes with superscripted letters -JDB] are the nodes to which actual forms are assigned. By convention, a cell is filled by the nearest specified [i.e., marked -JDB] form above it.”

[default inheritance, e.g., Network Morphology]

(19) V^* = write past^* = wrote -Ø 3^R = writes perf^R = written
V^* = prove past^* = proved -d 3^R = proves perf^R = proven

(20) Degree of syncretism may vary from sub-paradigm to sub-paradigm. For example, the English verb be marks more distinctions than do the regular verbs, which in turn mark more distinctions than the modals (some of which arguably mark something like non-past vs. “past” <subjunctive).

a. be — is - are — was (was) — were — been —C,B,A
b. write — writes — wrote — (written) —B,A
c. may — might — * —A

Williams’s approach to Meta-Paradigms has two components:

1. hierarchical organization of the features that define the paradigm space.
2. diacritic, language particular marking of nodes, as points of insertion.

Each of these has analogues in paradigm free theories, hence, to the extent the theories can be made to do the same things, there is no argument either way.

1. For the particular cases at hand, a simple hierarchy ordering tense morphemes prior to agreement morphemes across the board will suffice (mutatis mutandis, number before gender). Such hierarchies appear to be independently necessary (i.e., when the elsewhere subset principle does not determine order, see Ladd 1987, Noyer 1997), may have cross-linguistic validity, and are part and parcel of the theory of paradigms in Williams 1981, 1994 hence not contended here.

More subtle, the point of insertion. What exactly do these achieve?

1. In essence, the points of insertion define underspecification relative to the morphosyntactic feature structure, i.e., prior to vocabulary insertion.

For example, node “perf^R” dominates 6 person/number combinations, none of which has its own superscript:

Result: Regardless of the particular exponent of “perfect participle”
perfect participles will not bear agreement

Compare:

Marking Statements (Noyer, Calabrese)

[ person, # ] → Ø / [ perfect ]

Result: Regardless of the particular exponent of “perfect participle”
perfect participles will not bear agreement

(22) Russian Impoverishment (hypothetical)

[ gender ] → Ø / [ plural ]

Result: Meta-Paradigm in (15)
Williams’s insertion points constitute constraints on what parts of the morphosyntactic representation may feed the vocabulary insertion rules. They effect constraints on what is a possible vocabulary item in a given language.

Improvement Rules constitute manipulations of the morphosyntactic representation, after the syntax but prior to the vocabulary insertion rules (e.g., plural subjects are still plural in the past tense). They effect constraints on what is a possible vocabulary item in a given language.

Note: Improvements remove the reliance on extrinsic rule ordering implicit in the presentations above.

Recap: Meta-paradigms do not come for free on any type of theory. Meta-paradigms can be added in to either type of theory. Therefore: the existence of meta-paradigms alone does not bear on the choice among theories.

What does bear on the choice is purported generalizations over meta-paradigms Williams 1981, 1994

1.2 Subsumption / The Instantiated Basic Paradigm Hypothesis

“The empirical content of the theory outlined thus far consists in this: the structure of this tree is independent of particular nouns, of particular genders, and of particular declensions. This predicts that the possibilities of syncretism will be the same in each declension, in each gender, and in each noun. It also predicts that the same possibilities of syncretism exist within the singular and the plural.” Williams 1981:268

Williams notes that the degree of syncretism in a language may vary from sub-paradigm to sub-paradigm. For example, the English verb be marks more distinctions than do the regular verbs, which in turn mark more distinctions than the modals (some of which arguably mark something like non-past vs. “past” <subjunctive).

a. be — is - am - are — was (was) - were — been — C,B,A
b. write — writes — wrote — (written) — B,A
c. may — might — * — A

The annotations in the tree above describe this:

```
  Y^  inf 
^   pres  past
  perf  nh
  1 2 3 1 2 3
  1 2 3 1 2 3
  pl.
```

Williams 1994:27 proposes a condition on meta-paradigms such that there is one instantiated basic paradigm, such that all other paradigms mark a subset of the distinctions of the basic paradigm. E.g., for English, “the verb to be is the basic paradigm.”

(Without “instantiated”, this is simply the definition of contrastive).

In brief: (F1, F2, F3 are morphological categories or features or whatever)

- If for some class F1⇒F2⇒F3, and for another class F1⇒F2⇒F3 then for some other class F1⇒F2⇒F3

The basic paradigm

Basic Paradigm

```
feat 1 | feat 2 | feat 3
--- | --- | ---
A | B | C
D | E
```

Important point: Here, I believe, is a real point of difference among the models. As far as I can see, there is no way to state this as a requirement on grammars in any theory with the relevant properties of distributed morphology. If it is true for English, then this is an accident.

Two reasons:

1. no way for “paradigms” to talk to each other:

- If F2⇒F1 / (class 1) & F3⇒F2 / (class 2), then class 3 has no syncretism.

2. accidental syncretisms (vocabulary items) always possible

- If there is a general requirement that (meta-)paradigms mark a proper subset of an instantiated basic paradigm, then this is a solid argument for the existence of paradigms.

---

2 Even though the noun sheep does not morphologically distinguish singular and plural, it would be wrong to consider it underspecified for number in the syntax:

The sheep have seen themselves / has seen itself

*The sheep has seen themselves. *The sheep have seen itself.
We can quibble later about details of Williams’s implementation/theory. Let’s grant whatever is needed to make the theory work in the way he has indicated. The interesting point is that it can be restricted in a way that the alternative, paradigm-free theory cannot be and hence constitutes a prima facie argument for paradigms.

**BUT IS IT RIGHT?**

(29) Russian Nominal Declension (regular endings shown: this holds for “irregular” nouns as well, cf. ‘mother’ NOM.PL: materi, ACC,GEN.PL: materij.)

<table>
<thead>
<tr>
<th></th>
<th>Masc</th>
<th>Feminine</th>
<th>Masc</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sing</td>
<td>Plur</td>
<td>Sing</td>
<td>Plur</td>
<td>Sing</td>
</tr>
<tr>
<td>NOM</td>
<td>-Ø</td>
<td>-y</td>
<td>-Ø</td>
<td>-y</td>
</tr>
<tr>
<td>GEN</td>
<td>-a</td>
<td>-ov/-Ø…-a</td>
<td>-ov/-Ø…-a</td>
<td>-Ø…-Ø…-Ø…-Ø…</td>
</tr>
</tbody>
</table>

Conversely:
- All (sub-)paradigms that distinguish Dative from Prepositional systematically fail to distinguish Accusative from either Nominative or Genitive.

(30) Russian Adjective Declension - same meta-paradigms

<table>
<thead>
<tr>
<th></th>
<th>Masc</th>
<th>Feminine</th>
<th>Masc</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sing</td>
<td>Plur</td>
<td>Sing</td>
<td>Plur</td>
<td>Sing</td>
</tr>
<tr>
<td>NOM</td>
<td>-y</td>
<td>-ye</td>
<td>-y</td>
<td>-y</td>
</tr>
<tr>
<td>ACC</td>
<td>-y</td>
<td>-ye</td>
<td>-y</td>
<td>-ye</td>
</tr>
<tr>
<td>GEN</td>
<td>-y</td>
<td>-ye</td>
<td>-y</td>
<td>-ye</td>
</tr>
</tbody>
</table>

This is true of all aspects of Russian nominal declension, including “irregular” nouns, pronouns, proper names, derivational suffixes with “weird” paradigms (-onok, -amin, etc.)

- Williams’s theory predicts that there must be a basic paradigm which distinguishes NOM from ACC in GEN.

(31) Russian Nominal / Adjective Declension (Fem. sg.)

<table>
<thead>
<tr>
<th></th>
<th>Feminine Noun</th>
<th>Feminine poss. pron</th>
<th>Feminine Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM</td>
<td>-u</td>
<td>-u</td>
<td>-u</td>
</tr>
<tr>
<td>ACC</td>
<td>-u</td>
<td>-u</td>
<td>-u</td>
</tr>
<tr>
<td>GEN</td>
<td>-γ</td>
<td>-γ</td>
<td>-γ</td>
</tr>
</tbody>
</table>

The feminine singular (even the most irregular, idiosyncratic of feminine nouns) cannot constitute the basic paradigm for Russian, as defined above.

(32) Russian Nominal / Adjective Declension (Fem. sg.) [expanded]

<table>
<thead>
<tr>
<th></th>
<th>Feminine Noun</th>
<th>Feminine Poss. Pron</th>
<th>Feminine Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM</td>
<td>-a</td>
<td>moj-a</td>
<td>-aja</td>
</tr>
<tr>
<td>ACC</td>
<td>-u</td>
<td>moj-u</td>
<td>-oj</td>
</tr>
<tr>
<td>GEN</td>
<td>-γ</td>
<td>moj-еј</td>
<td>-ој</td>
</tr>
<tr>
<td>INSTR</td>
<td>-ој</td>
<td>moj-еј</td>
<td>-ој</td>
</tr>
<tr>
<td>DAT</td>
<td>-е</td>
<td>moj-еј</td>
<td>-ој</td>
</tr>
<tr>
<td>PREP</td>
<td>-е</td>
<td>moj-еј</td>
<td>-ој</td>
</tr>
</tbody>
</table>

1.3 Interim Conclusion (Part 1)

- There is no “basic paradigm” in Russian.
- (There is also no “basic paradigm” in Latin.)
- It does not seem to be possible to make the “basic paradigm” a requirement of U.G.
- A theory which incorporates such a notion is too restrictive, it undergenerates.

**Note:** This is a property of Williams’s theory, not of paradigm theories generally. However, recall that this particular property was the one that does not translate into the paradigm-free theory; that’s why it was important to look at this property—it had the potential to constitute a decisive argument in favour of paradigms.