

## CHAPTER 13

CASE AND  
DECLENSIONAL  
PARADIGMS

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## 13.1 INTRODUCTION

CASE plays a central role in declensional paradigms, as reflected in the way that declensions are traditionally described as ‘case paradigms’. Case is often the declensional feature with the largest and most heterogeneous inventory of values, and much of the structure of declensional paradigms derives from patterns within the case system. Some patterns involve oppositions between morphosyntactic case features, or between the forms that realize these features. However, other types of patterns are more ‘purely morphological’ (Aronoff 1994) in the sense that they relate sets of forms that do not comprise any kind of natural morphosyntactic class. It is the prevalence and intricacy of these morphological patterns that make case paradigms particularly relevant for general theories of morphology.

Three types of patterns are especially salient in case systems. The first involves a split within case systems. Languages with large case inventories frequently subdivide case forms into groups: one core set of ‘grammatical’ cases and one or more sets of ‘secondary’ or ‘semantic’ cases. The grammatical cases characteristically mark governed dependants such as subjects, objects, and indirect objects, as well as adnominal dependants such as possessors. The semantic cases tend to represent

spatial relations and other specific semantic properties. In many languages, the division between grammatical and semantic cases has a morphological reflex. Unmarked and fusional forms are far more likely to realize grammatical cases, whereas semantic cases are typically agglutinative, and are frequently based on a stem that corresponds to a grammatical case form. The grammatical/semantic case split tends to have a transparent historical basis, and semantic cases can often be shown to have arisen through the grammaticalization of postpositions or other formerly independent items, as Grünthal (2003) suggests for Finnic. Case systems exhibit other divisions, such as the split between ergative/absolutive and nominative/accusative patterns discussed by Silverstein (1976). However, the locus of this type of split lies outside the declensional system, as the paradigm of any given item will tend to follow a consistent nominative–accusative or ergative–absolutive pattern.

The second declension-internal pattern, which often cuts across other divisions, reflects the organization of case forms within a paradigm into form classes or ‘cohorts’. Nominal cohorts, like the members of many verbal series, are often characterized by common affixal exponents and/or by stem alternations which are orthogonal to natural morphosyntactic or morphosemantic classes. In some languages, declension-internal form classes are defined by patterns of whole-word syncretism between morphosyntactically distinct paradigm cells. In others, notably in the Finno-Ugric and Daghestanian languages, sets of morphosyntactically heterogeneous cases share a common base. In many of these systems, the sets of case forms that share a common form element cannot be assigned ‘general meanings’ (à la Jakobson 1936) that make any substantive contribution to the specific grammatical meanings of individual forms. These patterns are, in short, intrinsically morphological, not morphosyntactic, even allowing a more abstract level of description, and to the extent that there are explanations for the patterns, the explanations tend to be historical not synchronic.

The third pattern concerns the implicational structure that arises from the ‘relative informativeness’ of the members of a paradigm. In languages with a rich inflection class system, the members of a paradigm are linked by multiple implicational relations. However, it is often the case that certain forms are more informative than others and play a ‘diagnostic’ role, marking the declension class of a nominal and implying other members of the paradigm. Diagnostic forms fall most frequently within the grammatical case system, again mainly for historical reasons. Older case forms tend to be less uniform morphologically, and are thus more likely to correlate uniquely with individual paradigms or inflection classes. In some systems, higher-level generalizations may also be of diagnostic value, with class-specific patterns of syncretism or contrast serving to identify the paradigm of a nominal.

These patterns are illustrated in section 13.2, which surveys a variety of case paradigms and clarifies some of the descriptive and theoretical issues that they raise.

Chapter 13 concludes with a discussion of implications of these patterns for models of morphological analysis.

## 13.2 THE STRUCTURE OF CASE PARADIGMS

Declensional paradigms associate two structured domains. The first, morphosyntactic, domain is defined by the distinctive features of a language. The morphosyntactic structure of an individual paradigm is determined by the feature bundles that characterize distinct ‘cells’ in that paradigm. This structure is conventionally represented in traditional paradigm tables, in which natural classes correspond to sets of cells with common features. The second, morphological, domain contains the word forms that occupy paradigm cells. There are two basic perspectives on the morphological structure of paradigms. Traditional ‘word and paradigm’ models treat paradigms as networks of word forms. On this view, the morphological structure of a paradigm reflects formal relations between members of the paradigm. The notion of ‘exponence’ subsumes those relations that correlate with natural classes of features. But traditional approaches also recognize purely formal relations that are orthogonal to feature classes. Patterns of this type are sometimes termed ‘parasitic’ (Matthews 1972) or ‘morphomic’ (Aronoff 1994). Within the post-Bloomfieldian tradition, the primary locus of part–whole relations is shifted from paradigms onto words, so that morphological structure arises in the analysis of individual words into component morphs. Morphological models developed within this tradition – as well as those influenced by it – accord paradigms no real status within the grammar, but treat them instead as collections of independently-defined forms that share common stems or patterns of exponence. The view that paradigms are derivative sets of forms is clear, for example, in Anderson’s (1992: 134) definition of ‘an item’s paradigm’ as ‘the complete set of surface word forms that can be projected from its stem set by means of the inflectional Word Formation Rules of the language’.

The patterns exhibited by case paradigms in many languages bear in a fairly direct way on the evaluation of these alternative conceptions of morphological structure. In a sufficiently simple declensional system, it is often possible to regard morphological structure as derivative of morphosyntactic feature contrasts. However, languages with rich case inventories exhibit patterns and dependencies that appear to cut across classes of features and often contain ‘units of form’ at various levels that defy morphosyntactic analysis. Different types of patterns tend to arise in different types of case systems. As a rule, case systems with a small number of distinct forms exhibit more whole-word syncretism than stem syncretism,

Table 13.1. Case paradigm of 'weak' adjectives in German

|            | Masculine | Feminine | Neuter | Plural |
|------------|-----------|----------|--------|--------|
| Nominative | alte      | alte     | alte   | alten  |
| Accusative | alten     | alte     | alte   | alten  |
| Dative     | alten     | alten    | alten  | alten  |
| Genitive   | alten     | alten    | alten  | alten  |

whereas the converse is true of systems with large case inventories. These broad tendencies can be illustrated by considering a number of case systems of ascending complexity.

### 13.2.1 Case syncretism

The smallest morphological case pattern involves a single opposition between a pair of distinct forms. This pattern is found in German, where 'weak' adjectives exhibit a binary opposition between a form in *-e* and a form in *-en*, as illustrated in Table 13.1. The paradigm of weak masculine nouns follows the same pattern as the masculine adjectives in Table 13.1. For example, the nominative singular form *Mensch* 'person' contrasts with a second form, *Menschen*, which realizes all of the remaining case-number combinations.

Adjective paradigms in the Nakh languages (Chechen, Ingush, and Tsova-Tush/Batsbi) also contain just a pair of distinct forms. As shown in the paradigm of *jogga* 'big' in Table 13.2, the nominative singular is realized by the stem form and the remaining case-number combinations are realized by a second, 'oblique' form, which in Ingush is marked by *-ča*.

Table 13.2. Basic noun and adjective paradigms in Ingush (Nichols 1994a: 96–99)

|              | Singular  | Plural     | Sing/Plur |
|--------------|-----------|------------|-----------|
| Nominative   | kuotam    | kuotamaž   | jogga     |
| Genitive     | kuotama   | kuotamii   | joggača   |
| Dative       | kuotamaa  | kuotamažta | joggača   |
| Ergative     | kuotamuo  | kuotamaž   | joggača   |
| Allative     | kuotamaga | kuotamažka | joggača   |
| Instrumental | kuotamaca | kuotamažca | joggača   |
| Lative       | kuotamağ  | kuotameğ   | joggača   |
| Comparison   | kuotamal  | kuotamel   | joggača   |
|              |           | 'hen'      | 'big'     |

The descriptive challenges posed by the paradigms in Tables 13.1 and 13.2 arise at the level of morphosyntactic analysis. Without secure criteria for distinguishing feature neutralization from accidental homophony, it is not entirely clear how many cells to assign to the paradigm of *Mensch* or *jogga* (though see Chapter 14 on case syncretism in this volume for discussion). The form variation in these paradigms is, in contrast, relatively straightforward. In the paradigm of *jogga*, the form that realizes the nominative singular corresponds to the adjective stem, while the second form can be defined by suffixing the marker *-ča* to the stem. Hence, this paradigm can be defined by treating *joggača* either as the realization of an abstract ‘oblique’ case or else as a homophonous form that realizes multiple surface cases. In either event, there is no need to impose any further structure on the forms of *jogga*.

Evidence for paradigm structure comes from systems in which the formal patterns in a paradigm cross-cut feature classes in more intricate ways. In languages with a rich system of inflection classes, purely formal dependencies may even be of considerable diagnostic value. The paradigms in Table 13.3 illustrate three of the inflectional patterns for inanimate nouns in Polish. Of particular interest here are the syncretisms identified by the pairs of italicized forms. Each formal relation tends to hold between cells in a class of paradigms rather than between particular case exponents (though, as a reviewer notes, the identity of genitive singulars and nominative plurals in the neuter may be disrupted by stem alternations). The syncretism between locative and vocative singular in the paradigm of *świat* ‘world’ is also characteristic of nouns like *stół* ‘table’ with the syncretic form *stole*, as well as nouns like *brzeg* ‘edge’ with the syncretic form *brzegu*. The collapse of nominative plural and genitive singular in the paradigm of hard-stem neuters like *miasto* ‘city’ recurs in the paradigms of soft-stem nouns such as *zdjęcie* ‘photo’ and *narzędzie* ‘tool’, which have the syncretic forms *zdjęcia* and *narzędzia*. The identity of dative and locative singular forms in the paradigm of *szkoła* ‘school’ is characteristic of feminine declensions in general, as illustrated by the paradigms of *ulica* ‘road’,

Table 13.3. Inanimate noun paradigms in Polish (de Bray 1980: 263–80)

|              | Masculine <i>o</i> -stems |          | Neuter <i>o</i> -stems |               | Feminine <i>o</i> -stems |          |
|--------------|---------------------------|----------|------------------------|---------------|--------------------------|----------|
|              | Singular                  | Plural   | Singular               | Plural        | Singular                 | Plural   |
| Nominative   | świat                     | światy   | miasto                 | <i>miasta</i> | szkoła                   | szkoły   |
| Genitive     | świata                    | światów  | <i>miasta</i>          | miast         | szkoły                   | szkoł    |
| Accusative   | świat                     | światy   | miasto                 | miasta        | szkołę                   | szkoły   |
| Dative       | światu                    | światom  | miastu                 | miastom       | <i>szkole</i>            | szkołom  |
| Instrumental | światem                   | światami | miastem                | miastami      | szkołą                   | szkołami |
| Locative     | <i>świecie</i>            | światach | mieście                | miastach      | <i>szkole</i>            | szkołach |
| Vocative     | <i>świecie</i>            | światy   | miasto                 | miasta        | szkoło                   | szkoły   |
|              | 'world'                   |          | 'city'                 |               | 'school'                 |          |

*armia* ‘army’, *ziemia* ‘earth’ and *noc* ‘night’, which contain the syncretic forms *ulicy*, *ziemi*, *armii*, and *nocy*.

Class-specific syncretisms of the type exhibited in Table 13.3 cannot be subsumed under general patterns of case neutralization. Instead, these syncretisms are usually expressed by constraints that identify the realization of morphosyntactically distinct paradigm cells, whether in terms of the ‘take-overs’ of Carstairs (1984) or the ‘rules of referral’ of Zwicky (1985) and Stump (1993, 2001a). Take-overs and referrals both impose additional organization on a case paradigm – or on the rules that define the paradigm – by cross-referencing cells or rules.

### 13.2.2 Implication and reversal

The additional structure introduced by dependencies between cells in a paradigm can be captured in a variety of different ways. Take-overs and referrals are both ‘directional’ strategies in the sense that they define the form of one cell with reference to the form of another. This directionality often reflects a derivational perspective in which, as Stump (1993: 450) suggests, ‘realization rules . . . encompass the individual steps by which an individual word is built up from the root of its paradigm’. The syncretisms in Table 13.3 can be understood equally well in terms of symmetrical ‘paradigm structure constraints’ (cf. Wurzel 1984) that identify pairs of cells as mutually informative, that is, as reliable predictors of the forms associated with each of the cells. This more static conception conforms to a traditional ‘abstractive’ perspective in which the members of a paradigm form a network of elements linked by implicational relations (Blevins 2006). From this standpoint, the syncretic cells in Table 13.3 are related by mutual implication – or, more formally, by a high ‘mutual information’ value, in the information-theoretic sense (Cover and Thomas 1991).

The mutual implication between pairs of identical forms represents a highly specific type of information about the elements of a case paradigm. An insight that underlies traditional word and paradigm approaches is that some members of a paradigm may be more informative than others, along at least two dimensions of ‘informativeness’. Some aspects of a form identify the ‘grammatical meaning’ of the form, here its case and agreement features. Other aspects identify the inflection class or ‘lexeme’ that a form is affiliated with. A single form may mark both grammatical meaning and lexical class, as illustrated by *szkołę*, in which the ending *-ę* identifies an accusative form of an *o*-stem feminine noun. But forms may also identify the two different types of information in varying degrees. For example, an ending in *-ami* is diagnostic of instrumental plural in the paradigms in Table 13.3, but the instrumental plurals *światami*, *miastami*, and *szkołami* do not identify the class of the corresponding noun. In contrast, the grammatical meanings of *świat* or *szkoła* are not unambiguously signalled by any aspect of their form, given that a consonant-final form may realize the genitive plural, as in the case of *szkoł* or *miast*,

while an *a*-final form may realize the genitive singular, as in the case of *šwiata* and *miasta*. Pairs (or sets) of paradigm cells may likewise be asymmetrically informative. A nominative singular such as *šwiat* is diagnostic of a masculine *o*-stem noun, and implies a dative singular such as *šwiatu*. However, a dative singular in *-u* may either be associated with a masculine noun, as in *šwiatu*~*šwiat*, or with a neuter, as in *miastu*~*miasto*. These types of asymmetrical dependencies can again be modelled in either derivational or static terms, by means of derivational referral rules or take-overs, or in terms of information-theoretic notions such as the conditional entropy of a pair of cells.

For whole-word syncretism, there is perhaps not a great deal of difference between derivational and implicational strategies. The flexibility of an implicational perspective is brought out more clearly by other types of form dependencies in case paradigms. One striking pattern is exhibited by the ‘external cases’ that encode the syntactic function of nominals in Dinka. As Andersen (2002: 9) reports, the absolutive and oblique forms of many classes of Dinka nouns are distinguished by systematic patterns of ‘tone reversal’.

The oblique is distinguished from the absolutive in virtually all monosyllabic nouns that have a short vowel...and in most disyllabic nouns with the prefix à- and a short root vowel... The rule for such nouns is that if the absolutive has a low root tone... then the oblique gets a falling root tone, and if the absolutive has a high or falling root tone... then the oblique gets a low root tone.

Some examples that illustrate these alternations are given in Table 13.4. In each of the three patterns, it is the contrast between tones that is distinctive. There is no consistent association between tonal melodies and case values. Moreover, since these nouns are mostly simple monosyllables, it is unclear that the analysis of a case form involves any ‘derivational steps’ that a referral rule could access and invert in order to define the contrasting case form. In short, the operative relation

Table 13.4. Case alternations in Dinka (Andersen 2002: 9)

| Alternation | Absolutive | Oblique |            |
|-------------|------------|---------|------------|
| low~falling | Piŋ        | pîŋ     | ‘spear’    |
|             | uŋòt       | uŋôt    | ‘house’    |
|             | àjìt       | àjît    | ‘chicken’  |
|             | àŋwèm      | àŋwêm   | ‘buttock’  |
| high~low    | dít        | dìt     | ‘bird’     |
|             | báŋ        | bàŋ     | ‘chief’    |
|             | léc        | lèc     | ‘stick’    |
| falling~low | àŋàw       | àŋàw    | ‘cat’      |
|             | àrèw       | àrèw    | ‘tortoise’ |

between external cases in Dinka appears to hold between the surface forms that realize paradigm cells, and cannot be cast in terms of rules or devices that are taken to derive these forms. This type of dependency between forms fits well with a static conception of paradigm structure in which cells stand in implicational rather than derivational relations. For the nouns in Table 13.4, knowing the tonal melody of the absolutive allows one to predict the melody of the oblique. Knowing the oblique form either identifies the melody of the absolutive, or narrows the choice of melodies to one of two possibilities.

The tonal patterns in Dinka are reminiscent of the ‘vowel reversal’ that distinguishes indicative and subjunctive mood in the Romance paradigms discussed in Matthews (1991: 199). Estonian provides a more directly relevant parallel, as the ‘theme vowels’ in partitive singulars and ‘stem’ partitive plurals exhibit a similar pattern of vowel reversal. If a partitive singular ends in *-i*, as in the case of *tooli* ‘chair’ in Table 13.10 below, then the stem plural ends in *-e*, as in *toole*. Conversely, if the partitive singular ends in *-e*, as in *lille* ‘flower’, the corresponding plural, *lilli*, ends in *-i*. Like the tonal melodies in Dinka, the information value of the exponents *-i* and *-e* cannot be expressed by assigning them a definite case value, but only by recognizing their usefulness in predicting other forms of their case paradigm.

### 13.2.3 Stem syncretism

The Polish and Dinka paradigms in section 13.2.2 both involve dependencies between full word forms that occupy paradigm cells. Similar types of cross-paradigm dependencies may also hold between parts of word forms. In the general case, pairs or sets of forms share a common base, which differs from the basic root or stem of the paradigm. In a limiting case of this pattern, which is often termed ‘Priscianic’ or ‘parasitic’ syncretism, one word form constitutes the base for another form. Parasitic forms are often characteristic of complex case inventories that contain a set of grammatical case forms and a secondary set of semantic forms. The composition of parasitic forms also suggests the origin of some complex inventories, as the base tends to be drawn from the set of grammatical cases and the exponent of the semantic forms often corresponds to a grammaticalized adposition or other functional element.

A simple case of parasitic syncretism is found in Kabardian, where the oblique form of a noun provides the base for the instrumental form. This pattern is illustrated in Table 13.5.

In what Colarusso (1992) terms the ‘unspecified’ paradigm, there is no formal distinction between absolutive and oblique (or predicative) cases, so the instrumental marker could be treated as attaching to a basic stem such as *gʷaata* ‘sword’. However, in the ‘specified’ paradigm, the instrumental marker *-kʷa* is added to an oblique form marked by a final *-m*. Thus oblique *gʷaatam* provides the base for

Table 13.5. Absolute noun declensions in Kabardian (Colarusso 1992: §3)

|              | Specified Paradigm                   |  |                      |                        | Unspecified                         |                     |
|--------------|--------------------------------------|--|----------------------|------------------------|-------------------------------------|---------------------|
|              | Singular                             | Plural                                 | Singular             | Plural                 | Paradigm                            |                     |
| Absolute     | g <sup>y</sup> aatar                 | g <sup>y</sup> aatahar                 | šəḁər                | šəḁhar                 | g <sup>y</sup> aata                 | šəḁ                 |
| Oblique      | g <sup>y</sup> aatam                 | g <sup>y</sup> aataham                 | šəḁəm                | šəḁham                 | g <sup>y</sup> aata                 | šəḁ                 |
| Instrumental | g <sup>y</sup> aatamk <sup>y</sup> a | g <sup>y</sup> aatahamk <sup>y</sup> a | šəḁəm <sup>y</sup> a | šəḁhamk <sup>y</sup> a | g <sup>y</sup> aatak <sup>y</sup> a | šəḁk <sup>y</sup> a |
| Predicative  | g <sup>y</sup> aataw                 | g <sup>y</sup> aatahaw                 | šəḁəm                | šəḁəm                  | g <sup>y</sup> aata                 | šəḁ                 |
|              |                                      | 'sword'                                |                      | 'donkey'               | 'sword'                             | 'donkey'            |

instrumental *g<sup>y</sup>aatamk<sup>y</sup>a*. The fact that the instrumental is a secondary formation based on a central set of cases leads Colarusso (1992: 51) to suggest that the instrumental is not a separate case, but rather a suffixed form of a case:

Specified (definite or indefinite) nouns in Kabardian can take four cases: absolute, oblique, instrumental, and predicative. Two of these, however, the instrumental, and the predicative, might be considered to be other than cases. The instrumental is actually a suffix on the oblique, while the predicative has a multitude of roles but can generally be seen as an adverb suffix or a complementiser, a sign that the noun comes from an underlying absolute or oblique which has been lost due to syntactical complexities.

To some degree, the anomaly of the instrumental in Kabardian is due to the fact that it is a single, isolated form. In languages with larger case inventories, the status of secondary formations is often clearer. For example, the allative forms *kertaga* and *kuotamaga* (repeated from Table 13.2 above) underlie the secondary case forms of *kuorta* 'head' and *kuotam* 'hen' in Table 13.6. Since each secondary case has an invariant marker, the allative implies the form of the secondary cases, and each of the secondary cases identifies the allative base. Similar patterns are found in the other Nakh languages. Chechen contains six 'secondary cases' that are described as being 'derived from the allative' (Nichols 1994a: 24). Tsova-Tush likewise retains 'numerous complex case forms' of which 'the most frequent are locatives formed by adding the locative suffix *-h̄* to the allative or the allative II forms' (Holitsky 1994: 168).

The relation between the allative and the secondary cases in Ingush is, moreover, just one link within a larger network of implications. The allative singulars *kuotamaga* and *kertaga* are themselves based on the genitive singulars *kuotama* and *kerta*. These genitive singulars also provide a base (italicized in Table 13.6) for most of the other singular forms of *kuotam* and *kuorta*. The nominative plural *kuotamaž* is also based on the genitive singular, as in many noun classes. This pattern does not hold for all classes, as shown by the contrast between genitive singular *kerta* and nominative plural *kuortož*. However, in both paradigms, the nominative plural identifies the ergative plural and provides the base (set in bold in Table 13.6) for the

Table 13.6. Primary and secondary case forms in Ingush (Nichols 1994b: 95, n.d.)

|                 | Singular         | Plural          | Singular       | Plural         |
|-----------------|------------------|-----------------|----------------|----------------|
| Primary Cases   |                  |                 |                |                |
| Nominative      | kuotam           | kuotamaž        | kuorta         | kuortož        |
| Genitive        | <i>kuotama</i>   | kuotamii        | <i>kerta</i>   | kuortoi        |
| Dative          | <i>kuotamaa</i>  | kuotamažta      | <i>kertaa</i>  | kuortožta      |
| Ergative        | kuotamuo         | kuotamaž        | kertuo         | kuortož        |
| Allative        | <i>kuotamaga</i> | kuotamažka      | <i>kertaga</i> | kuortožka      |
| Instrumental    | <i>kuotamaca</i> | kuotamažca      | <i>kertaca</i> | kuortožca      |
| Lative          | <i>kuotamağ</i>  | kuotameğ        | <i>kertağ</i>  | kuortuojeğ     |
| Comparison      | <i>kuotamal</i>  | kuotamel        | <i>kertal</i>  | kuortuojel     |
| Secondary Cases |                  |                 |                |                |
| Locative 2      | kuotamagaḥ       | kuotamažkaḥ     | kertagaḥ       | kuortožkaḥ     |
| Ablative        | kuotamagara      | kuotamažkara    | kertagara      | kuortožkara    |
| Ablative 2      | kuotamagaḥara    | kuotamažkaḥara  | kertagaḥara    | kuortožkaḥara  |
| Translative     | kuotamagağolla   | kuotamažkağolla | kertagağolla   | kuortožkağolla |
|                 |                  | 'hen'           |                | 'head'         |

dative, allative, and instrumental plurals. These systematic form correspondences underlie the economy of an Ingush case paradigm, since a small number of forms identify the full case paradigm. It is this implicational structure that a traditional analysis exploits when it factors declensional classes into sets of exemplary paradigms and principal parts. In Ingush, the genitive singular and nominative plural are of obvious diagnostic value, though the forms based on the genitive singular or nominative plural are equally informative. Given the uniformity of case endings in Ingush, instrumental forms such as *kuotamaca* or *kertaca*, for example, uniquely identify their respective bases, *kuotama* and *kerta*. From a traditional perspective, then, nearly any form of an Ingush case paradigm provides a 'point of entry' into a network of implications that will identify the forms of other members of that paradigm.

The diagnostic value of nominatives and genitives in Ingush (as well as ergatives in many North Caucasian languages) is explicit in standard descriptions that classify these forms as 'stems'. A stem can, of course, be understood as a common 'element of form' that is shared by a set of interpredictable members of a paradigm, and in this sense stems are equally compatible with an abstractive or derivational view of paradigm structure. However, some accounts adopt or imply a narrower conception, in which stems are seen as basic units from which larger forms are constructed. In many instances, the postulation of stems serves mainly to avoid recognizing direct relations between surface word forms in a paradigm. The patterns in Dinka suggest that relations between surface forms cannot be avoided in general, and even in languages that exhibit pervasive stem syncretism, the introduction of abstract stems tends to obscure more than illuminate the structure

of a declensional paradigm. The question is not whether recurrent units of form are explicitly characterized as ‘stems’ within an analysis, since little hinges on this issue. The substantive point concerns the *status* of such units, however they are classified. On a constructive account, stems are building blocks from which larger forms are assembled, and which have a status independent of those larger forms. On an abstractive approach, stems are shared elements of form that are common to the elements of a case paradigm.

In the Ingush paradigms in Table 13.6, the genitive singular might be identified as an ‘oblique’ or ‘second’ stem, of the kind regularly posited for Daghestanian languages (Kibrik 1991, 1994a; Haspelmath 1993a). One could then construct an analysis on which the genitive singular is formally unmarked and thus realized by the oblique stem, while the dative, allative, instrumental, lative, and comparison cases are formed by suffixing a case ending to the oblique stem. Yet a constructive analysis along these lines creates a number of artefactual complications. The allative singular is marked by the exponent *-ga* and in this respect appears to pattern with the other singular case forms. But unlike the other forms, the allative provides a base for the secondary cases. If the secondary cases are taken to be based on the allative, the analysis admits relations between surface word forms and there is no obvious rationale for treating the genitive differently. But recasting the allative singular as a stem is artificial, as the former allative markers – which remain in complementary distribution with the other case markers – must be reclassified as stem formants, and the allative becomes another formally unmarked case, which is realized by the selection of a ‘third’ stem.

### 13.2.3.1 *Case series*

The difference between treating stems as a basis for form implications and treating stems as basic lexical units are clearer in languages with more intricate patterns of stem syncretism. Daghestanian languages exhibit one type of pattern, in which secondary cases are organized into a number of locative ‘series’. The paradigms of the class I noun *wacc* ‘brother’ and the class II noun *kamyón* ‘truck’ in Table 13.7 display the structure of secondary series in Avar. Each series – including the ‘grammatical’ series – exhibits informative patterns of stem syncretism. The absolutive singular is the ‘root’ form of a noun, which underlies the absolutive plural as well as the singular and plural ergative forms. The root itself is of limited diagnostic value, as neither the ergative singular nor the absolutive or ergative plural can be predicted from the root in isolation. In contrast, the ergative singular and plural forms imply the form of the remaining grammatical cases. Although one cannot predict which formative will mark the ergative singular of a noun, given the ergative singular (either alone, or in conjunction with the ergative plural) one can segment the form into root and formative. The genitive and dative forms are in turn distinguished from the corresponding ergative by a final *-ul* or *-e*. The absolutive plural is again

Table 13.7. Noun declensions in Avar (Charachidzé 1981: 53)

|                    | Singular      | Plural       | Singular         | Plural         |
|--------------------|---------------|--------------|------------------|----------------|
| Absolutive         | wacc          | wáccal       | kamyón           | kamyónal       |
| Ergative/Inst      | wáccass       | wáccaz       | kamyónall'       | kamyónaz       |
| Genitive           | wáccassul     | wáccazul     | kamyónall'ul     | kamyónazul     |
| Dative             | wáccasse      | wáccaze      | kamyónall'e      | kamyónaze      |
| Superessive Series |               |              |                  |                |
| Locative           | wáccassda     | wáccazda     | kamyónalda       | kamyónazda     |
| Allative           | wáccassde     | wáccazde     | kamyónalde       | kamyónazde     |
| Ablative           | wáccassdassa  | wáccazdassa  | kamyónaldasse    | kamyónazdassa  |
| Translative        | wáccassdassan | wáccazdassan | kamyónaldassan   | kamyónazdassan |
| Subessive Series   |               |              |                  |                |
| Locative           | wáccassul'    | wáccazul'    | kamyónall'ul'    | kamyónazul'    |
| Allative           | wáccassul'e   | wáccazul'e   | kamyónall'ul'e   | kamyónazul'e   |
| Ablative           | wáccassul'a   | wáccazul'a   | kamyónall'ul'a   | kamyónazul'a   |
| Translative        | wáccassul'an  | wáccazul'an  | kamyónall'ul'an  | kamyónazul'an  |
| Apudessive Series  |               |              |                  |                |
| Locative           | wáccassuq     | wáccazuq     | kamyónall'uq     | kamyónazuq     |
| Allative           | wáccassuqe    | wáccazuqe    | kamyónall'uqe    | kamyónazuqe    |
| Ablative           | wáccassuqa    | wáccazuqa    | kamyónall'uqa    | kamyónazuqa    |
| Translative        | wáccassuqan   | wáccazuqan   | kamyónall'uqan   | kamyónazuqan   |
| Inessive Series    |               |              |                  |                |
| Locative           | wáccassull'   | wáccazull'   | kamyónall'ull'   | kamyónazull'   |
| Allative           | wáccassull'e  | wáccazull'e  | kamyónall'ull'e  | kamyónazull'e  |
| Ablative           | wáccassull'a  | wáccazull'a  | kamyónall'ull'a  | kamyónazull'a  |
| Translative        | wáccassull'an | wáccazull'an | kamyónall'ull'an | kamyónazull'an |
|                    |               | 'brother'    |                  | 'truck'        |

not predictable from the root, though it does correlate with the ergative plural. The alternation between absolutive *wáccal* and ergative *wáccaz* in Table 13.7 is the only pattern that Charachidzé (1981: 45) describes as 'totally productive'. Other patterns apply to more restricted subclasses but remain nevertheless informative, as they allow a speaker to determine the plural grammatical cases from a single form.

The ergative forms also underlie the four series of secondary cases. In each series, the locative is based on the corresponding ergative and in turn underlies the other forms of its series. The last three series in Table 13.7 are particularly uniform. The locative is marked by *-ul'*, *-uq*, and *-ull'*, respectively, forming a base for an allative in *-e*, an ablative in *-a*, and a translative in *-an*. The superessive series departs only slightly from this pattern. In this series, the allative ending *-(d)e* alternates with the locative ending *-da*, and the ablative and translative endings *-ssa* and *-ssan* 'contain the segment *-ss-* (*-ssa*) which, under other conditions, indicates possession' (Charachidzé 1981: 45). Although the case inventory in Avar is larger than in Ingush,

and contains more complex forms, the uniformity of case markers determines similar kinds of mutually reinforcing patterns of interpredictability.

Given these patterns, a speaker can deduce the forms of an unfamiliar noun from the corresponding ergative, or from nearly any form based on the ergative. On a traditional analysis, for example, the ergative and genitive would be linked by mutual implication: if an ergative form of a noun is realized by  $X$  then the genitive is realized by  $Xul$ , and conversely. The same type of dependency holds between other pairs of forms. If one ablative form of a noun is realized by  $X$ , then the corresponding translative is realized by  $Xn$ , and vice versa. The network of dependencies that hold over a paradigm can be schematized as a set of implicational paradigm structure constraints of the form (ergative,  $X$ )  $\approx$  (genitive,  $Xul$ ). Or these patterns can be exhibited by sets of exemplary paradigms and extended to new forms by proportional analogies of the sort proposed initially by Paul (1920). Using the paradigm of *wacc* in Table 13.7 as an analogical base, one can deduce the nominative plural of *či* ‘man’, *čiyal*, from the ergative plural *čiyaz* by ‘solving for  $X$ ’ in the proportion *waccaz*: *waccal* = *čiyaz*:  $X$ .

As in Ingush, implications hold between paradigm cells rather than between forms in isolation. It is knowing that *waccass* realizes the ergative singular that allows a speaker to identify the other singular grammatical cases, as well as the forms of the secondary series. The ergative can be regarded as the stem of noun paradigms in Avar, if ‘stem’ is interpreted to mean a recurrent element of form that is common to the members of a paradigm. The predictive value of a recurrent form is clearly exploited in schemas or proportions that use the ergative to deduce other case forms. However, the ergative is not uniquely informative, nor does its predictive value in analogical deductions force any particular morphotactic analysis.

If, however, one adopts a narrower construal of stems as ‘building blocks’, much of the flexibility of an implicational perspective is lost, because ‘recurrent elements of form’ must be construed as ‘sub-word units’. A stem-based analysis in this ‘derivational’ sense would associate each Avar noun with a lexical stem set, including (among other forms) the ergative forms in the guise of ‘oblique stems’. Ergative case would then be formally unmarked, and the grammatical cases based on the ergative forms would be taken to be built from the corresponding oblique stem. The distinction between inflectional stems and words becomes essentially distributional on this type of account; the ergative form corresponds to a stem because it underlies other forms of the paradigm, but the genitive is not a stem because it does not underlie any other forms. But what is the status of the locative forms? Since locatives underlie other forms of a series, they too would seem to be stems, formed from the oblique stem and what is sometimes termed a ‘series marker’. What then about ablative forms, which appear to underlie the translative, even in the superessive series, where both forms contain the element *-ss-*? Do ablatives comprise yet another stem, which provides a base for a uniform translative

Table 13.8. The Super series in Lezgian (Haspelmath 1993a: §7.1.2)

| Final Vowel | Ergative | Inessive | Superessive | Superdirective | Superrelative |         |
|-------------|----------|----------|-------------|----------------|---------------|---------|
| Stressed    | čarxú    | čarxá    | čarxál      | čarxáldi       | čarxálaj      | 'rock'  |
|             | čarčí    | čarčé    | čarčél      | čarčéldi       | čarčélaj      | 'paper' |
| Unstressed  | nek'édi  | nek'éda  | nek'édal    | nek'édaldi     | nek'édilaj    | 'milk'  |
|             | šehéri   | šehéra   | šehérral    | šehérraldi     | šehérrilaj    | 'town'  |

marker *-n*? And if locatives and ablatives are not stems, but rather word forms that act as bases, on what principled grounds are ergatives treated as sub-word stems?

More generally, treating ergatives and other bases as sub-word units leads to a number of forced choices. A network of interpredictable forms may contain multiple implicational patterns that identify the realization of a given paradigm cell. But if this implicational structure is recast in derivational terms, as it must be in models that 'build' forms from an oblique stem, then it becomes necessary to select a particular derivation and choose a morphological analysis for the parts of a derived form. In many cases, there may be no principled basis for choosing between alternatives and no evidence that speakers are forced to make this kind of choice. The forms of the Lezgian Super series in Table 13.8 provide a further illustration.

Haspelmath (1993: 78) states that the inessive form 'is marked by lowering the final vowel of the oblique stem' (which realizes the ergative in Lezgian). This gives rise to the alternations between the final vowels in the ergative and inessive forms in Table 13.8. In the continuation of this passage, Haspelmath notes that corresponding superessive forms show the same vowel lowering, and thus can be derived from either the ergative or the inessive.

The characteristic consonant of the Super localization is *-l*, which is added not directly to the oblique stem like the Ad, Sub and Post suffixes, but to a form whose final vowel has been lowered. Alternatively, one could say that the *-l* is attached to the Inessive case.

Haspelmath (p. 79) then turns to the relation of the superdirective to the superessive, and the formation of the superrelative, which follows one of two stress-dependent patterns.

The Superdirective is formed completely regularly from the Superessive by adding the Directive suffix *-di*, but a further complication arises in the Superrelative case: Here the final vowel of the oblique stem suffix is lowered only when it is stressed, as shown in [Table 13.8].

From a traditional perspective, the Super cases exhibit multiple patterns of implication that permit a speaker to deduce new forms in more than one way. The superessive is identifiable from the inessive by a deduction that can be stated as (inessive, *X*)  $\approx$  (superessive, *Xl*). Or exemplary ergative–superessive pairs can be used to deduce a new superessive *X* in a proportion such as *nek'édi: nek'édal = šehéri: X*.

The superdirective can likewise be deduced from the superessive, or from other exemplary pairs. The fact that only a superessive with a final stressed vowel predicts the vowel of the corresponding superrelative can be incorporated into a deductive schema, or this generalization can be encapsulated in exemplary superessive–superrelative pairs that exhibit the stress-conditioned variation described above. In short, a network of implicational relations can readily accommodate patterns in which a form *X* (e.g. *čarxú*) implies another form *Y* (e.g. *čarxá*), which in turn underlies a further form *Z* (e.g. *čarxál*), which itself provides the base for another form *W* (e.g. *čarxáldi*). Any one of the forms in the series *čarxá* – *čarxál* – *čarxáldi* implies the others, without dictating the status of either the stems that they share or of the endings that distinguish them.

However, an analysis that defines the Super series by adding exponents successively to an oblique stem is faced with a number of largely arbitrary choices. If the superessive is formed from the oblique stem, then this formation duplicates the vowel lowering in the inessive. But if the superessive is formed from the inessive, then either the analysis allows one case form to be derived from another – undermining the rationale for treating the ergative as a sub-word stem – or else the analysis is committed to treating the inessive also as a stem. The same issues arise in connection with the superdirective. If it is formed from the superessive, then either the analysis allows words to function as bases for other words, or the superessive is also a stem. If the superdirective is not formed from the superessive, then its formation must replicate the derivational steps that define the superessive base in *-l*. The ideal solution to these kinds of analytical choices is evidently a strategy that manages to avoid them altogether.

It is worth stressing that descriptive generalizations that make reference to notions like ‘oblique stems’ are wholly independent of the assumption that these stems are sub-word units. The rationale for treating stems as sub-word units is set out clearly in Kibrik’s (1991: 257) discussion of the status of ergative/oblique stems in Daghestanian languages.

Two different opinions can be found in the literature: (a) these markers are markers of the ergative case and all oblique cases are formed from the ergative; (b) these markers are markers of the oblique stem (of the singular or plural) and the ergative has no special marker and coincides with the oblique stem of the appropriate number. The first point of view is unsatisfactory: it does not take account of the semantics of the oblique cases (ergative meaning is not a component here), nor of the data from other Daghestanian languages, where the ergative frequently has a special morphological marker like other oblique cases...

The observation that ‘ergative meaning is not a component’ of the meaning of secondary cases merely shows that an ergative or genitive *entry* does not underlie the *entries* of secondary case forms in Archi or other Daghestanian languages. Only on a derivational account would one assume that stem syncretism in Archi involves a relation between entries rather than forms. From a traditional perspective, the

relation between these elements is purely formal: the form of the ergative implies the form of the corresponding secondary cases. This type of analysis also avoids the obscure ‘semantics’ that would be associated with an oblique stem. The observation that the ergative does not form a proper part of secondary case forms in some Daghestanian languages again counts against a derivational account on which secondary cases are built from the ergative. If the ergative form implies the form of the secondary cases, there is no reason that the ergative must be a proper part of the secondary cases.

In short, any insights stated in terms of oblique stems can be preserved by reinterpreting these stems as recurrent elements of form and excising the assumption that these elements must be sub-word units. This revision does not, of course, entail that recurrent units of form cannot be sub-word units. The fact that an ergative singular in *-i* implies an inessive in *-é* in Lezgian could be expressed by a schema (ergative, *Xi*)  $\approx$  (inessive, *Xé*), in which the ‘stem’ *X* need not correspond to the nominative form, as in the case of pairs like *čarči – čarčé*, in which *-či* is the ergative marker. In the corresponding proportional analogy, which uses exemplary pairs such as *čarči – čarčé* as an analogical base, the implicit stem is again the non-word *čarč*.

### 13.2.3.2 Case cohorts

The forms that make up a series in Avar and Lezgian exhibit a measure of morphosemantic coherence, and the same is true of local case series in other languages. However, sets of forms based on a common stem need not be morphosyntactically or morphosemantically coherent. Grade alternations in Sanskrit declensions provide one familiar example, in which differences in stem grade reflect the placement of Indo-European accent (Szemerényi 1990: 111ff). Finno-Ugric languages provide even more strikingly heterogeneous sets or ‘cohorts’ of forms based on a common stem. The paradigms in Table 13.9 below show the two patterns of gradation found

Table 13.9. Exemplary first declension paradigms in Saami (Bartens 1989: 511)

|                     | PI (‘Weakening’) |           | PII (‘Strengthening’) |             |
|---------------------|------------------|-----------|-----------------------|-------------|
|                     | Singular         | Plural    | Singular              | Plural      |
| Nominative          | bihtá            | bihtát    | baste                 | basttet     |
| Genitive/Accusative | bihtá            | bihtáid   | bastte                | basttiid    |
| Illative            | bihtái           | bihtáide  | bastii                | basttiide   |
| Locative            | bihtás           | bihtáin   | basttes               | basttiin    |
| Comitative          | bihtáin          | bihtáguin | basttiin              | basttiiguin |
| Essive              | bihtán           | bihtán    | basten                | basten      |
|                     |                  | ‘piece’   |                       | ‘spoon’     |

in first declension nouns in (Northern) Saami. In the weakening pattern PI, the nominative and illative singulars and the essive forms are all strong, as indicated by consonant doubling in the forms *bihttá*, *bihttái* and *bihttán*. The remaining forms of the paradigm are weak in PI. The strengthening pattern PII distinguishes the same sets of forms, but inverts the strong/weak contrast. In PII, the nominative and illative singulars and the essive forms are weak (*baste*, *bastii*, and *basten*), and it is the other forms that are strong.

The forms of first declension nouns thus fall into the two heterogeneous sets. The nominative and illative singulars and the essive comprise one set, which is strong in PI and weak in PII. The other forms comprise a second set, which is weak in PI and strong in PII. As in a case series, each of the members of a cohort set predicts the form of the other members of the same set. But unlike locative series, neither of the sets in Saami can plausibly be characterized as a syntactic or semantic class. The division of these paradigms into purely formal cohort sets is reinforced by the syncretism between the comitative singular and the locative plural, two forms which again do not comprise any obvious natural class.

Estonian declensions present even more intricate patterns of interpredictability within sets of morphosyntactically heterogeneous forms. These patterns have been discussed in detail elsewhere (Viks 1992, Erelt et al. 2000, Blevins 2005, 2006), so a brief summary will suffice here. The paradigms in Table 13.10 show three of the patterns exhibited by first declension nouns. The paradigm of *maja* 'house' shows no grade alternations, but does contain an overlong short illative *majja* whose first

Table 13.10. Exemplary first declension nouns in Estonian

|                | Singular       | Plural           | Singular        | Plural             | Singular       | Plural           |
|----------------|----------------|------------------|-----------------|--------------------|----------------|------------------|
| Nominative     | <i>maja</i>    | <i>majad</i>     | <i>`tool</i>    | <i>toolid</i>      | <i>rida</i>    | <i>`read</i>     |
| Genitive       | <i>maja</i>    | <i>majade</i>    | <i>tooli</i>    | <i>`toolide</i>    | <i>`rea</i>    | <i>ridade</i>    |
| Partitive      | <i>maja</i>    | <i>majasid</i>   | <i>`tooli</i>   | <i>`toolisid</i>   | <i>rida</i>    | <i>ridasid</i>   |
| Stem Partitive |                | <i>maju</i>      |                 | <i>`toole</i>      |                | <i>ridu</i>      |
| Short Illative | <i>`majja</i>  |                  | <i>`tooli</i>   |                    | <i>`ritta</i>  |                  |
| Illative       | <i>majasse</i> | <i>majadesse</i> | <i>toolisse</i> | <i>`toolidesse</i> | <i>`reasse</i> | <i>ridadesse</i> |
| Inessive       | <i>majas</i>   | <i>majades</i>   | <i>toolis</i>   | <i>`toolides</i>   | <i>`reas</i>   | <i>ridades</i>   |
| Elative        | <i>majast</i>  | <i>majadest</i>  | <i>toolist</i>  | <i>`toolidest</i>  | <i>`reast</i>  | <i>ridadest</i>  |
| Allative       | <i>majale</i>  | <i>majadele</i>  | <i>toolile</i>  | <i>`toolidele</i>  | <i>`reale</i>  | <i>ridadele</i>  |
| Adessive       | <i>majal</i>   | <i>majadel</i>   | <i>toolil</i>   | <i>`toolidel</i>   | <i>`real</i>   | <i>ridadel</i>   |
| Ablative       | <i>majalt</i>  | <i>majadelt</i>  | <i>toolilt</i>  | <i>`toolidelt</i>  | <i>`realt</i>  | <i>ridadelt</i>  |
| Translative    | <i>majaks</i>  | <i>majadeks</i>  | <i>tooliks</i>  | <i>`toolideks</i>  | <i>`reaks</i>  | <i>ridadeks</i>  |
| Terminative    | <i>majani</i>  | <i>majadeni</i>  | <i>toolini</i>  | <i>`toolideni</i>  | <i>`reani</i>  | <i>ridadeni</i>  |
| Essive         | <i>majana</i>  | <i>majadena</i>  | <i>toolina</i>  | <i>`toolidena</i>  | <i>`reana</i>  | <i>ridadena</i>  |
| Abessive       | <i>majata</i>  | <i>majadeta</i>  | <i>toolita</i>  | <i>`toolideta</i>  | <i>`reata</i>  | <i>ridadeta</i>  |
| Comitative     | <i>majaga</i>  | <i>majadega</i>  | <i>tooliga</i>  | <i>`toolidega</i>  | <i>`reaga</i>  | <i>ridadega</i>  |
|                | 'house'        |                  | 'chair'         |                    | 'row'          |                  |

syllable is in the third quantity (Q<sub>3</sub>). (As in Viks 1992, Q<sub>3</sub> syllables are marked with a preceding grave accent; see Lehiste (1997) for a recent summary of the phonetic properties of Q<sub>3</sub> syllables.) The paradigms of *tool* ‘chair’ and *rida* ‘row’ both exhibit weakening gradation, in which the partitive singular and forms based on it are strong, whereas the genitive singular and the forms based on it are weak. In the paradigm of *tool*, grade is marked by the contrast between a Q<sub>3</sub> partitive *tooli* and a non-Q<sub>3</sub> genitive *tooli*. In the paradigm of *rida*, the strong partitive *rida* is a disyllable and the weak genitive is an overlong monosyllable *rea*, which is the result of a historical process of consonant elision. As these paradigms show, grade is an intrinsically morphological property, which correlates with phonetic quantity in different ways in distinct paradigms. Whereas *majja* is grade-neutral, *toole* is in the strong grade and *rea* is in the weak grade.

As in Saami, the sets of interpredictable forms in Estonian are morphosyntactically heterogeneous. To trace just one path of dependencies, the partitive singular provides the base for the genitive plural, which in turn underlies each of the plural semantic cases, from the illative plural through the comitative plural. In a second cohort set, the genitive singular provides the base for the nominative plural and again underlies each of the singular semantic cases, from the illative through the comitative.

### 13.3 CONCLUSION

The paradigms described above highlight some recurrent patterns that arise in an especially clear form in relatively complex case systems. The discussion of analytical choices brings out a number of theoretical implications of these types of systems, and emphasizes the challenges that arise on analyses that attempt to ‘build’ the forms of complex case paradigms from sub-word stems. It is immaterial whether case forms are assembled in an ‘item and arrangement’ fashion (Hockett 1954) by suffixing morphemes to a stem, or whether they are derived in an ‘item and process’ manner by applying feature-adding rules to the stem. On either analysis, the multidimensional structure of a paradigm collapses to a set of independent derivations which are forced to assign often arbitrary morphotactic classifications to elements which are of less predictive value than the word forms from which they are extracted. By breaking a case paradigm down into a collection of independently-defined forms, a post-Bloomfieldian analysis obscures the network of relations that hold between forms.

Neo-Jakobsonian analyses that seek ‘general meanings’ for cohorts of case forms pursue a similar reductionist programme in a morphosyntactic domain. The appeal

to general meanings is one response to Kibrik's (1991: 257) objection that 'ergative meaning is not a component' of the meaning of secondary cases in Daghestanian languages. It is usually possible to describe Priscianic syncretism by classifying parasitic bases as stems that realize an 'abstract case meaning', though at the cost of introducing diacritic features with a purely distributional 'meaning'. This is particularly evident in Estonian, where the partitive meaning of *tooli* 'chair' is not a component of the genitive plural meaning of *toolide*, which in turn is not a component of plural semantic case meanings. An abstract stem corresponding to *tooli* would thus be assigned features that it shares with the partitive singular and the genitive plural – as well as with the partitive plural *toolisid* – but which contrast with the features of genitive singular *tooli*. A similar problem arises with the nominatives, given that the singular form *tool* is based on the strong stem whereas the plural form *toolid* is based on the weak stem. One can set up a parallel inventory of 'stem features' to describe these patterns. However, the features will have no connection to genuine case 'meanings', general or specific. Instead, as in Stump (2001a), the abstract features will tag sets of forms with a common base, in the same way that the features in Jakobson (1936) tag forms with common endings.

Case paradigms, in short, represent a type of system 'où tout se tient' and it is only by treating paradigms as complex wholes that an analysis uncovers their organizing principles.