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## Unaccusative Syntax and Verbal Alternations

*David Embick*

### 5.1. INTRODUCTION

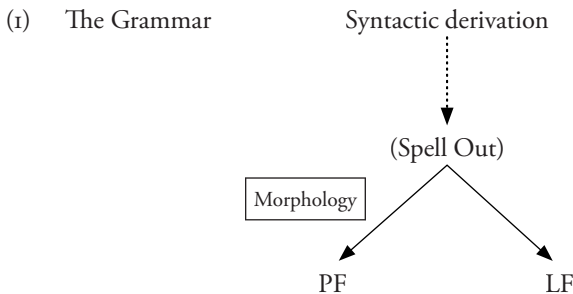
Syntactic and lexico-semantic properties are both implicated in the study of unaccusativity. Accordingly, a persistent question in the discussion of unaccusativity as a theoretical notion has been whether or not a reduction is possible in either direction. Typically, the question has been whether the verbs that behave syntactically as unaccusatives do so as a result of their lexical semantics. In broader terms, this is part of the larger question of whether or not the syntactic behaviour of a verb is (uniquely) determinable from its semantic properties. The association of arguments of a predicate to syntactic positions is referred to as the question of ‘Linking’ in theories of the interface between syntax and the lexicon; Pesetsky (1995) and Levin and Rappaport Hovav (1995) provide overviews of this and related issues. Similar questions apply to verbs that enter into verbal alternations, concerning whether the verbs that do and those that do not enter certain alternations are distinguishable by semantic criteria. The focus in this chapter is not on these types of lexico-semantic question, but is instead

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on the syntactic structures and syntactico-semantic features that are involved in unaccusative syntax.

‘Unaccusative syntax’ is understood here in a structural sense as referring to cases in which an external argument is not projected. In the sense I intend, unaccusative syntax is found both in unaccusatives in the standard sense, as well as in passives, which are syntactically intransitive in lacking an external argument, but nevertheless agentive. The structural factor uniting these contexts (the absence of an external argument) underlies a number of cross-linguistically common syncretisms—that is, cases of identical morphological realization in distinct syntactico-semantic contexts. Syncretisms of this type, in which disparate syntactic constructions show ‘the same’ or similar morphology, are crucial to the understanding of the manner in which syntax and morphology relate to each other and to other parts of the grammar. Much of the chapter is devoted to showing the role that unaccusative syntax plays in defining such syncretisms as those mentioned. In section 5.2, I will discuss the importance of the unaccusative analysis of reflexives in the analysis of patterns such as that alluded to above. This aspect of the chapter will also involve a revision to that analysis for certain systems. Second, in section 5.3 I will discuss the nature of the morphological syncretism that centres on unaccusative syntax, and show that it arises by morphology being sensitive to the absence of an external argument. In section 5.4 I discuss alternatives to the analysis presented in sections 5.2 and 5.3. One alternative considered is that the absence of an external argument is encoded in a syntactico-semantic feature. The second alternative is based on a recent critique of the unaccusative analysis of reflexives, which holds that reflexives have, in effect, the syntax of unergatives. Finally, section 5.5 concludes.

Some background is required before the discussion proceeds. One set of assumptions I will make concerns the relationship between syntax, morphology, and the lexicon, and stems from work in Distributed Morphology (Halle and Marantz 1993, 1994, and related work). Particularly relevant is the architecture provided by this theory, in which morphology interprets the output of the syntactic derivation by (among other things) adding phonological content to positions in a hierarchical structure:



The syntax manipulates terminal nodes containing abstract features, at least for functional heads. There is a difference in the theory between functional heads on the one hand and the members of the open-class vocabulary on the other. The latter are referred to as ‘Roots’ (in the notation  $\sqrt{\text{ROOT}}$ ), and are category-neutral. The

abstract features present on the functional heads in the syntax are spelled out with phonological content in the process of Vocabulary Insertion, which takes place in morphology. Individual Vocabulary Items consist of a phonological exponent and the features that it is associated with. Thus, for example, the English plural /-z/ is associated with the following Vocabulary Item: -z [PL]. Vocabulary Items are inserted such that the item with the greatest subset of the features on a node will win out over its competitors. As a result of this, exponents, the morphophonological objects that are inserted into these nodes, may be underspecified with respect to the morphosyntactic context in which they appear. This type of underspecification will figure prominently in the analysis presented in section 5.4.

This grammatical architecture forces a particular approach to the study of verbal alternations. There is no extra-syntactic lexicon in which word-formation of any type, or in particular the derivation of one verbal class from another, can take place.<sup>1</sup> What there is to say about verbal alternations is essentially syntactic, and consists in identifying the structures and features underlying particular alternations. In this way there are clear connections with the Hale and Keyser approach to argument structure (Hale and Keyser 1993 and related work), at least to the extent that the structures proposed in that framework are actually part of the syntax and not some other component.

Every theoretical framework has to list certain types of unpredictable information, whether the special meaning found with *kick the bucket*, or the basic sound–meaning connections found in a Root such as  $\sqrt{\text{DOG}}$ . In this framework, there is a further component of the grammar, the *Encyclopedia*, in which special meanings of the type found with idioms, light-verb constructions, and, for that matter, simple Roots are listed. Certain aspects of what is sometimes called lexical semantics are therefore stored in this list. Among other things, the fact that certain verbs enter transitivity alternations (*The vase broke* and *John broke the vase*) while others do not (*The books arrived* and *\*John arrived the books*) implicates Encyclopedic knowledge—that is, centered on the semantic differences between the two roots.<sup>2</sup>

## 5.2. REFLEXIVIZATION AND UNACCUSATIVE SYNTAX

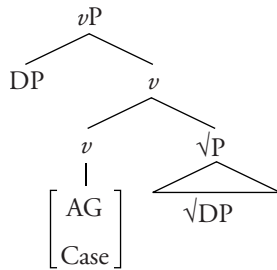
The idea that unaccusatives and passives do not have external arguments is a familiar one. Here I will review some further assumptions concerning (1) the licensing of external arguments, and (2) the unaccusative analysis of reflexives. Based ultimately on arguments that the external argument is not an argument of the verb per se (cf. Marantz 1984), Kratzer (1994, 1996) proposes that such arguments are the specifiers of

<sup>1</sup> This position will be articulated in greater detail in sect. 5.2.

<sup>2</sup> See also Borer (in this volume) and van Hout (in this volume) for related perspectives.

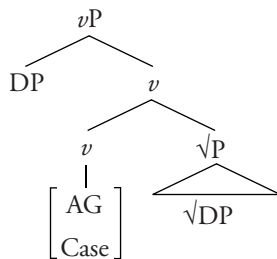
a functional head that takes the VP as an argument. Although the connections here are somewhat tenuous, the head in question is sometimes identified with the  $v$  ('small  $v$ ') employed in Chomsky (2000) and subsequent work (cf. also Hale and Keyser 1993); I will assume this identification for convenience here.<sup>3</sup> The structure of a transitive  $v$ P is as follows:

(2) Transitive



On this implementation, [AG] is a semantic feature with the properties proposed by Kratzer. Thus, the  $v$  head has interpretable (and uninterpretable) feature content. Returning to the connection between passives, reflexives, and unaccusatives, I will assume the structure in (3) for the  $v$ P in a passive. Like a transitive, this  $v$  contains the feature [AG], which is responsible for the agentive interpretation of the passive; the external argument DP and the Case feature are absent, however (see below).<sup>4</sup>

(2) Transitive



The structure of unaccusatives is similar; the primary difference is that these will lack the feature [AG], and will therefore not be interpreted agentively. Reflexives differ in terms of how exactly they manifest unaccusative syntax. As noted above, a pattern

<sup>3</sup> Naturally the possibility always exists that there are several heads in the VP broadly construed,  $v$ , Voice, etc.

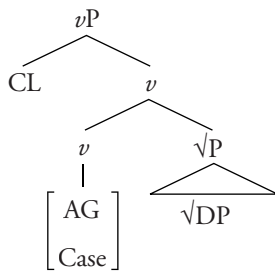
<sup>4</sup> In the passive, the idea is that the Agent argument, which is licensed by the feature [AG] on  $v$ , does not appear; Kratzer gives [AG] the following semantics:

(i)  $AG^* = \lambda x, \lambda e, [Agent(x)(e)]$

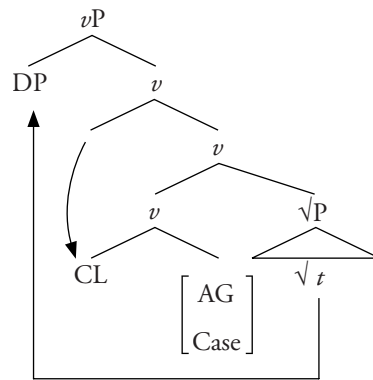
A further conjunction rule is needed to identify the event argument here with that of the VP. Kratzer's discussion is centred on the case of actives, in which a DP is projected in the specifier of the head bearing [AG] and is taken by that head as an argument. It seems plausible that the agentive interpretation, when no DP argument is present, is derivative of a process akin to existential closure, although I cannot pursue this here.

found in a number of unrelated languages involves the appearance of identical morphological marking in the intransitive members of transitivity alternations, certain types of reflexive, and passives passives.<sup>5</sup> Many attempts to capture the similarities between these morphosyntactic contexts have been based on Marantz's (1984) proposal that each of these environments involves the absence of an external argument; ultimately this is derivative of the feature [-logical subject] in that framework.<sup>6</sup> As implemented in a series of subsequent analyses (Kayne 1988; Pesetsky 1995; McGinnis 1997, among others) focusing on SE-clitics in Romance, the derivation of reflexives involves the cliticization of an anaphoric external argument, with subsequent raising of the object to a position from which it binds the anaphor. That is, the clitic is generated in the specifier of *v*, as the initial configuration in (4) shows.

(4) Reflexive I



(5) Reflexive II



The external argument then cliticizes onto *v*, satisfying the Case feature of *v* such that the internal argument will check Nominative Case. Note that the internal argument is required to raise, in order to bind the cliticized anaphor. This requirement makes reflexives of this type unlike unaccusatives, in which there is no such requirement (cf. section 5.5.2).<sup>7</sup> There is a further question concerning the nature of the operation that combines CL with the verb; the arrow in (5) is therefore somewhat figurative, indicating that the clitic and the verb will get together at some point.

<sup>5</sup> These three do not exhaust the full range of configurations that appear in such systems.

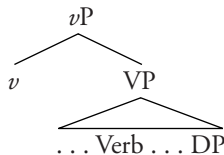
<sup>6</sup> The primary motivation for the unaccusative analysis of reflexives in Marantz (1984) was syntactic, however. Nevertheless, the connection between this analysis and the analysis of the syncretism is clear.

<sup>7</sup> The mechanics of the raising of the internal argument present difficulties within current Minimalist assumptions about movement, particularly if the *v* in such structures as those in (4) and (5) define strong phases—the most natural assumption, if this is in fact a type of transitive. If the internal argument remains *in situ*, then this *v* could not be a phase. The argument would be phase-internal, and could not raise to T subsequently in the derivation, in that it would not appear at the phase boundary. What is needed is for the internal argument to move to [Spec, *v*] in order for subsequent movement to be possible. But movement of the object to adjoin to *v*P cannot be for Case reasons if the Case feature of *v* is checked by the cliticization of the external argument to this head.

The account sketched above is referred to as the ‘unaccusative analysis of reflexives’, for obvious reasons. Two points about this analysis figure prominently in the discussion to come. The first is about what unifies reflexives and unaccusatives according to this treatment. The two are similar only to the extent that the full (i.e. non-clitic) DP originates as an internal argument. In other respects they differ: the reflexive is agentive, while the unaccusative is not; and the reflexive is syntactically transitive, in that in the initial stages of the derivation it has an external argument. So the unaccusative analysis of reflexives holds that reflexives and unaccusatives have some properties in common; not that they are identical. The second point about the unaccusative analysis of reflexives concerns whether or not the cliticized external argument approach is always appropriate for systems in which reflexives and unaccusatives show some common properties. As I will show below, reflexives in some languages can show unaccusative syntax without showing the exact derivation outlined in (4)–(5).

With the idea behind the unaccusative analysis of reflexives at hand, I will now examine the nature of the morphological syncretism often found with passives, reflexives, and unaccusatives. For convenience, I will refer to this as the ‘u-syncretism’. The analysis I present is based on the idea that a particular structural property is at the heart of this morphological pattern. In particular, unaccusative syntax, represented abstractly in (6), is the relevant factor:

- (6) Unaccusative syntax



Although passives, reflexives, and unaccusatives differ in a number of ways in terms of feature content and other aspects of their derivation, they all have a common subpart, represented in (6). In some languages, morphological realization is sensitive only to this structural property. When this situation occurs, the u-syncretism results.

### 5.3. ILLUSTRATION

I will now illustrate aspects of the u-syncretism in a series of case studies. Modern Greek shows a version of u-syncretism, in which non-active (Nact in glosses) morphology appears in a number of syntactic environments. The analysis of non-active voice in Modern Greek illustrates three primary points about the nature of u-syncretism:

- (7) Points from the discussion of Modern Greek
1. Non-active voice appears in the context of unaccusative syntax; and this type of syntactic configuration is found with passives, unaccusatives, and certain reflexives.

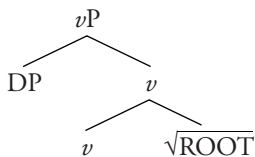
2. The formation of certain reflexives in Greek shows a type of unaccusative syntax, but this derivation does not involve a cliticized external argument; rather, an adverbial element is prefixed to the verb.
3. Reflexive interpretation depends on verb class—some verbs, the body-action type (*wash*, etc.), receive reflexive interpretation with the signal of unaccusative syntax alone. Other verbs require something in addition.

Modern Greek verbs inflect for two voices morphologically—active and non-active. Non-active voice appears in three basic types of alternation.<sup>8</sup> To begin with, passives (8) and the intransitive versions of some verbs appearing in transitivity alternations (8a) show this form:<sup>9</sup>

- (8) O Yanis katastrafike.  
 the Yanis destroy.Nact.3SG  
 ‘Yanis was destroyed.’
- a. tsakizo  
 break.Act  
 ‘break-Transitive’
- b. tsakizome  
 break.Nact  
 ‘break-Intransitive’

Not all verbs that enter transitivity alternations show non-active voice in the intransitive form; such patterns are quiet common cross-linguistically. The default hypothesis given the theory of syntax–morphology interactions assumed here is that the morphological difference should directly correlate with a structural or featural difference in the verb classes showing morphological differences (Alexiadou and Anagnostopoulou, in this volume, develop the latter type of approach). An analysis of this type is found in Hale and Keyser’s (1998) discussion of two different types of alternating verb, one basically transitive, the other, basically intransitive (cf. also Alexiadou and Anagnostopoulou 1999). To take a pertinent example, Hale and Keyser propose the structures in (9) and (10) for derivations based on ‘adjectival’ Roots, along the lines of the English verb *redde*n (Hale and Keyser’s V appears as *v*).

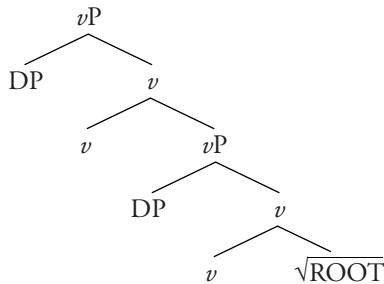
- (9) Intransitive



<sup>8</sup> In addition, non-active voice appears invariably with a small class of verbs, the *deponents*; some such verbs show non-active form in spite of being in what appears to be transitive, active, syntax (see Embick 1998).

<sup>9</sup> See Alexiadou and Anagnostopoulou (in this volume) for the transitivity alternations.

## (10) Transitive



There is an important question at this point as to whether something like (i) is unaccusative or not. In the structural sense in which I am employing the term here, it may or may not be. On the one hand, the *v* head has an argument in its specifier. On the other hand, the DP is a sister of what appears to be a type of complex predicate, and so in that sense might not be truly external. In yet another sense, however, if we define ‘unaccusative’ as ‘non-agentive intransitive’, it would count as unaccusative, with a non-agentive *v*. A further possibility involves reference to the features on *v*, with modifications to the Hale and Keyser analysis; see Alexiadou and Anagnostopoulou (in this volume). Whether or not one adopts Hale and Keyser’s structures, it is a distinct possibility that some of the difficulty in identifying clear patterns of unaccusative behaviour stems from the existence of the two distinct notions of unaccusativity discussed in this footnote. Different phenomena and different languages might be sensitive to either the ‘No External Argument’ or the ‘No Agentive *v*’ properties. Differences in (among other things) morphological realization in transitivity alternations could be captured in these terms, in accordance with the strongest hypothesis about the interface. If this is unworkable, other options, such as contextual allomorphy, are available.

Two types of reflexive also appear with non-active voice. First, certain verbs are interpreted as reflexive when they appear with the non-active voice:<sup>10</sup>

- (11) I            Maria        xtenizete        kathe mera.  
 the.NOM Maria.NOM comb.Nact.3SG every day  
 ‘Maria combs herself every day.’

In addition to the type illustrated in (11), there is also a second type, with the verb prefixed with *afto-* ‘self’ and non-active voice:

- (12) O Yanis afto-katastrafike.  
 the Yani self-destroy.Nact.3SG  
 ‘Yani destroyed himself.’

What is of note in this type is the connection between *afto-* and the non-active morphology: both are required for a reflexive interpretation. If the former is absent only a

<sup>10</sup> In addition to verbs dealing with various body actions, such as ‘wash’, there are other verbs capable of receiving this interpretation as well. See Manney (2000) for examples.

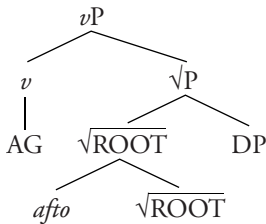


passive interpretation is possible, and if the latter is absent the sentence is ungrammatical.<sup>11</sup> These two types of reflexive contrast with reflexives formed with an actual anaphor, in which the active form appears:

- (13) *Vlepo ton eafto mu.*  
 see-Act.ISG the self my  
 ‘I see myself.’

In the case of reflexives with *afto-*, it seems clear that this element effects reflexivization. The question that remains concerns how exactly this takes place. Given what we have seen above in the discussion of Romance *se-*clitics, one possibility is that *afto-* is the realization of an external argument that has cliticized onto the verb. A second possibility is that *afto-* is in effect adverbial. Modern Greek shows what is classified as ‘adverb incorporation’ more generally, with the adverbial elements being realized prefixally on the verb.<sup>12</sup> Whether or not the adverb has actually incorporated, or is present in a type of compounding (which I consider more likely), the point is that if this option is correct, the derivation is unlike what happens in the Romance case. The *afto-* prefix appears in nominalizations like *afto-katastrof-i* (‘self-destruction’), and this is a type of nominalization in which an Agent is not licensed (cf. Alexiadou 2001). If the *afto-* prefix realized a clitic external argument, i.e. an Agent, it could not appear in nominalizations of this type. The fact that such nominalizations are possible shows that *afto-* is not the external argument. Consider now the following structure, in which *afto* is shown attached to the verbal Root:

- (12) *Afto-reflexive*



In terms of the presence of a *v* that licenses agentive interpretation, the structure is like that of a passive. However, the main verb in this case has the interpretation ‘self-V’. There is a single argument, the DP complement of the Root. In this structure, the object is the object of a self-V action; that is, *John was self-destroyed*. In this sense, the sole DP argument comes to be interpreted as agentive in a derivative fashion—that is, without having originated as the specifier of *vP*.

<sup>11</sup> Putative exceptions show *afto-* with active morphology; however, these do not receive a reflexive interpretation. See Rivero (1992) and Embick (1998).

<sup>12</sup> Cf. Rivero (1992) for adverb incorporation, although Rivero does not propose this type of derivation for *afto-* prefixed verbs. Rivero’s proposal is that *afto* is an incorporated direct object. The reason for the systematic appearance of non-active voice in these cases would not be attributable to the absence of an external argument if this were the case, and her proposal will not be considered further.

With the body-action type verbs like the example in (11), something further must be said. The most consistent would be that the reflexive interpretation is possible because of the Encyclopedic semantics of the verb—that is, the self-related component is part of the verb's meaning. It is tempting to form an analogy with such English examples as *John got dressed*, where the interpretation can be agentive in spite of the apparently passive syntax, something which does not happen for other verbs (cf. *John got arrested*).

The case of *afto*-prefixation indicates a great deal about the nature of u-syncretism. The actual reflexivization that occurs is brought about through *afto*-. Non-active voice appears in addition. It is clear from what we have seen above that non-active morphology does not actively reflexivize anything. For one, it is simply not required to do so in the *afto*- case. It is, moreover, clearly not reflexivizing the verb in the unaccusatives and the passives we have seen above. Foreshadowing the discussion of the next section, the generalization is instead that the non-active voice simply appears when there is no external argument; that is, it signals *unaccusative syntax*. How precisely it does so will be addressed in detail in the next section. In the rest of this section I illustrate the points raised in the discussion of Greek in two additional languages.

Fula (West Atlantic, Niger-Congo) has a three-way voice system, with endings for what are labelled active, middle, and passive voice.<sup>13</sup> The forms referred to as middle occur in the intransitive variants of certain verbs which are transitive in active form, and indicate an action that occurs without reference to an external agent (Arnott 1970: 256):<sup>14</sup>

- (15) a. 'O-besd-ii sheede.  
3SG-increase-ACT price  
'He increased the price.'
- b. Sheede besd-ake.  
price increase-MID  
'The price increased.'

Within a class of verbs pertaining to bodily action, the middle form has a reflexive interpretation; thus for the verb *wash*, the Active, Middle, and Passive are as follows:

- (16) a. 'O-loot-ii biyiko.  
3SG-wash-ACT child  
'She washed her child.'
- b. 'O-loot-ake.  
3SG-wash-MID  
'She washed herself.'

<sup>13</sup> In the following discussion I draw on the work of Arnott (1956, 1970), as well as the discussion of Klaiman (1991, 1992).

<sup>14</sup> It also appears in certain statives. According to Arnott 'the emphasis is on the state and not the means'.

- c. 'O-loot-aama.  
3SG-wash-PASS  
'She was washed.'

Outside of this class of verbs, it is not possible to form reflexives by simply applying middle-voice endings to transitive verbs; instead, the reflexive suffix *-t/-it-* appears on the verb, along with the middle voice:

- (17) a. wara  
kill.ACT  
'kill'  
b. war-t-o  
kill-REFL-MID  
'commit suicide'

Contrasting verbs of this type with the type illustrated in (16), Arnott (1970: 342) notes that these refer to 'actions which it is unusual for a Fulani to perform on himself.' As examples Arnott gives *femmba* ('shave'), *moora* ('dress hair'), *ndaara* ('look at'), *ta'ya* ('cut') and others.<sup>15</sup> The reflexive interpretation is possible for these verbs only when they have both *-t/-it-* and the Middle voice.<sup>16</sup>

The pattern is thus as follows. For a specific set of Roots, a reflexive interpretation is possible with the middle-voice morphology, which signals unaccusative syntax, alone; this is parallel to the *wash*-type verbs in Greek above, subject to differences in the identity of the actual verbs. With other verbs, a specific reflexive affix is required. The middle-voice morphology appears in these reflexives as well, signalling unaccusative syntax. In Fula, it is quite possible that the Romance-type analysis, with a cliticized external argument, is the appropriate one for the reflexive affix. What is important for our purposes is that it is the reflexive affix that is actually responsible for reflexivization. The middle-voice morphology merely functions to signal unaccusative syntax, which is also present in such reflexives. The connection to Greek reflexivization above is thus quite clear. Further evidence for an adverbial analysis of certain reflexivizing elements, as in Greek *afto-* above, can be found as well. I illustrate this in Tolkapaya (a dialect of Yavapai, a Yuman language). The discussion here is based on the treatment of Munro (1996).<sup>17</sup> Tolkapaya shows a signal *-v* which is sensitive to the absence of an

<sup>15</sup> With *shave*-type verbs it is possible to form middle-voice forms without the reflexive suffix *-t/-it-*; in such cases, however, the interpretation is not reflexive (Arnott labels it 'causative reflexive'):

- (i) a. Mi-femmbii-mo.  
1SG-shave.ACT-3SG  
'I shaved him.' (active)  
b. Mi-femmb-ake.  
1SG-shave-MID  
'I got myself shaved.'

<sup>16</sup> According to Arnott (1956: 134), the reciprocal suffix appears only with active endings. I will not investigate the reasons behind this difference here.

<sup>17</sup> As are the transcriptions. I would like to thank Pamela Munro for clarifying a number of points concerning the Tolkapaya facts. The analysis I present is in some sense an instantiation of Munro's idea that Tolkapaya *-v* is involved in valency reduction.

external argument. Some verbs are interpreted reflexively or as stative passives when suffixed with *-v-*, glossed here as ‘MINUS’ (for ‘minus an argument’) in accordance with Munro’s practice:<sup>18</sup>

- (18) Hamany-che chthúl-v-i.  
 child-NOM wash-MINUS-ABS  
 ‘The child is washed/The child washes himself.’

In addition to the interpretations given above, the same form with *-v* can also be interpreted as ‘washable’. Munro classifies the standard interpretations of verbs with *-v* as reflexive, passive, and middle—that is, configurations in which no external argument is projected.

The example above shows a reflexive interpretation with the verb *wash*. With other verbs, a reflexive interpretation is not possible with the *-v* suffix alone, but is found if the element *yeem*, glossed here as ‘self’, is present. When *yeem* appears without *-v* the interpretation is adverbial, meaning ‘all alone’, ‘all by oneself’. This type of verb-dependent difference is illustrated in the following two verbs, for ‘cut hair’ and ‘cut’, from Munro (1996). The former is interpreted reflexively with *-v-* alone, whereas the latter has a passive (stative) interpretation with the *-v-* suffix:

- (19) chíir-i ‘cut (someone’s) hair’  
 chíir-v-i ‘cut one’s hair’
- (20) chkyát-i ‘to cut’  
 chkyát-v-i ‘to be cut’  
 yeem chkyàt-v-i ‘cut oneself’

Munro notes that in general the adverbial *yeem* forces the reflexive interpretation is forced; otherwise it may or may not be available, depending on the verb involved, apparently.<sup>19</sup>

In this section I have examined three languages in which Reflexivization interacts with or involves the absence of an external argument, and in which a morphological syncretism between reflexives and other syntactic configurations results. The case-studies emphasize the point that in such systems, verbs with reflexive interpretation do not allow for a uniform syntactic analysis cross-linguistically, and in some cases differ structurally within the same language. Even languages which show the familiar syncretism of reflexive with unaccusative and Passive show different properties in the reflexive system when it is examined in greater detail.<sup>20</sup> In particular, while the analy-

<sup>18</sup> In other cases, the range of interpretations of *-v-* suffixed verbs thus varies somewhat idiosyncratically. Munro notes such cases as *s=blok-i* (‘to take by the handle’), *s=blok-v-i* (‘to have a curved handle’), in which the semantic relationship is rather indirect.

<sup>19</sup> Munro notes that *yeem* may be optionally present with verbs such as *wash* in (16).

<sup>20</sup> It should be pointed out that there is no necessary connection between this type of reflexivization and the type of voice marking we have been examining. In addition, there are languages that mark morphologically the absence of external arguments, while also marking reflexives with active voice. Creek, a Muskogean language, shows a suffix *-kV*, which appears in the intransitive members of transitivity alter-

sis with a cliticized external argument (cf. (4) and (5)) seems to hold for the Romance type of reflexivization and its unaccusative properties, a further type has been identified here in which there is unaccusative syntax and an ‘adverbial’ type of reflexivization. In addition, there is a question concerning the nature of the ‘special’ class of verbs that lend themselves to reflexive interpretation with the morphological marker of unaccusativity alone. This could be because of the special Encyclopedic semantics of these verbs, an implementation of something which is often referred to as ‘inherent reflexivity’.

Up to this point, the analysis has concentrated on showing the relevance of the absence of an external argument to the study of certain verbal alternations. I will now turn to the question of how morphological realization relates to the external argument property.

#### 5.4. IMPLEMENTATION

The question raised by the u-syncretism is as follows: how is it that passives, reflexives, and unaccusatives can have the same morphology, while at the same time being semantically and syntactically distinct? As we have seen, these configurations have a subproperty in common, in that they all lack external arguments. The analysis I propose will make the morphological patterns a reflex of this common structural property. It holds that for the purposes of morphological realization, the absence of an external argument plays a defining role, so that in effect other differences between passives, reflexives, and unaccusatives are ignored by the morphology.

Some background is required in order to understand the nature of this approach to syncretism. To begin with, morphological elements may be underspecified with respect to the syntactic environment in which they appear. ‘Underspecification’ in this sense refers to the properties of phonological exponents with respect to syntactico-semantic environments in which these exponents will be inserted. To take a simple example, consider the suffixes found on Romanian adjectives (the discussion here is based on Noyer 1998):

(21) Romanian adjectives		
	Singular	Plural
Masculine	-Ø	-i
Neuter	-Ø	-e
Feminine	-ă	-e

nations and certain passive-like forms (cf. Martin 1991; Hardy 1994). Once again these are environments in which external arguments are absent, as in Martin’s analysis. Reflexives, however, are formed with a reflexive prefix, and show active morphology—that is, no *-kV* suffix. Cases of this type are of interest from the perspective of the approaches of Marantz (1984) and McGinnis (1997), which hold that all ‘clitic’ reflexive systems involve unaccusative syntax.

While the exponents  $-ā$  and  $-i$  appear in only a single environment, each of the other two suffixes,  $-∅$  and  $-e$ , appear in more than one position. The theory assumes that the morphosyntactic positions in which Vocabulary Insertion is taking place are fully specified. So, concentrating on the plural for exposition, there are three distinct feature bundles to consider prior to insertion:

(22) Feature bundles

$$a. \begin{bmatrix} +\text{Masc} \\ +\text{Pl} \end{bmatrix}$$

$$b. \begin{bmatrix} +\text{Neut} \\ +\text{Pl} \end{bmatrix}$$

$$c. \begin{bmatrix} +\text{Fem} \\ +\text{Pl} \end{bmatrix}$$

Consider now the vocabulary items in (23).

(23)  $[+\text{masc} +\text{pl}] -i$   
 $[+\text{pl}] -e$

These rules are ordered by the familiar principle according to which the most specific rule will take precedence over one that is less specified. Applied to the three feature bundles in (22), the desired results are captured. For (22*a*), the conditions for the insertion of  $-i$  are met; in each of (22*b*, *c*), the most specific rule that can apply inserts  $-e$ .

In this example,  $-e$  is underspecified with respect to the morphosyntactic environment it is inserted into, so it appears in both feminine and neuter plurals. However, it is the same  $-e$  that appears in each case. The underspecification of phonology with respect to morphosyntax or syntax/semantics in this manner allows for the pervasive patterns of syncretism found in natural language to be captured systematically, a point which has figured prominently in the critique of Lexicalist approaches to morphology.

Returning to the *u*-syncretism, the syntax generates passives, reflexives, and unaccusatives, each fully specified for the distinct features that make these distinct verbal constructions. The functional head *v* is overtly realized in a number of languages. The most direct statement of the *u*-syncretism thus involves saying that this pattern results from the realization of *v* in a particular structural environment. Using  $-X$  to refer to the feature or signal associated with non-active type morphology, the representation of this is as follows:

(24)  $v \ v-X / \_\_\_ \text{No external argument}$

The spell-out here is stated somewhat abstractly, in terms of the symbol  $-X$ . This is necessary in order to capture further properties of morphology that determine how the morphological sensitivity to the absence of an external argument is manifested. In Modern Greek, for instance, the  $-X$  here would be an abstract feature [Non-Act], which underlies the realization of entire sets of non-active agreement endings;

see Embick (1998) for discussion.<sup>21</sup> In Tolkapaya, however, there is a single exponent, *-v*, associated with the absence of an external argument. In that language, then, (24) will result in the spell-out of this actual exponent. By underspecifying  $\neg X$ , so that it is sensitive to only this property, we have an answer to why passives, reflexives, and unaccusatives can have the same morphological realization while still being syntactico-semanticly distinct. Syntactico-semanticly they are distinct; but they have a common structural property which is directly relevant to morphological realization. The underspecification of morphology with respect to syntax in this way is one of the defining features of Distributed Morphology, and realizational approaches to morphology more generally. Lexicalist theories are incapable of capturing syncretism without appealing to accidental homophony, a type of analysis that clearly misses the relevant generalizations.<sup>22</sup> While the u-syncretism is centred on a syntactico.semantic object and its features, there is no syntactico.semantic feature [-external argument]; rather, the immediate environment of *v* determines morphological realization.<sup>23</sup> The apparent effects of a [-external argument] feature are reduced to a syntactic head subject to contextual allomorphy or feature assignment in morphology; and the head and these processes are each independently required.

In the next section I examine alternatives to the analysis I have provided. Before doing so, I would like to stress a few points concerning the approach I have adopted here. I am not assuming that all languages show some version of the u-syncretism in the way I have discussed it here. Neither am I assuming that all languages show some aspects of unaccusative syntax in the derivation of reflexives. The focus has instead been on the nature of the u-syncretism in the languages that show it, as a means of exploring properties of the syntax–morphology interface. Further cross-linguistic questions, concerning the fact that notional reflexives seem to be associated with a number of distinct syntactic configurations, will be touched on in the conclusion.

## 5.5. ALTERNATIVES

There are two possible alternatives to the analysis presented above. One alternative is that there is actually a feature [-external argument] present in the syntax; this is addressed in section 5.5.1. The second alternative is that the unaccusative analysis of reflexives, which figures crucially in the analysis above, is incorrect. This position has been taken by Reinhart (1997) and Reinhart and Siloni (in this volume) and is the topic of section 5.5.2.

<sup>21</sup> It might also be the case that it is a *v* head with certain features that is subject to (22); see Alexiadou and Anagnostopoulou (in this volume).

<sup>22</sup> For the general point about lexicalist problems with syncretism there is an ample literature; Noyer (1997, 1998) provides an overview. See Embick (1998, 2000) for further discussion of syncretism in voice morphology. <sup>23</sup> This position is also explored in Lidz (1998).

### 5.5.1. A [-external argument] feature in syntax?

In determining whether there are grounds for positing a [-external argument] feature in the syntax, two questions must be asked: (1) is a [-external argument] feature necessary for syntactic reasons? and (2) is a [-external argument] feature necessary for semantic reasons? The distinction here follows one which is based on the division of feature-types by Chomsky (1995). The answer to the first question is that the presence or absence of external arguments is, in syntactic terms, derivative of the workings of other features. There is thus no syntactic reason to posit such a feature. If the second question were answered affirmatively, the implication would be that a [-external argument] feature is required for interpretive properties found in each of the cases found in typical u-syncretisms. There is no reason to posit such a feature, as what needs to be said about the interpretation of passives, reflexives, and unaccusatives is derivative of other factors. In the rest of this subsection I expand each of these points.

In recent syntactic discussions the status of external arguments revolves around relationships between Case and other properties of the clause. Specifically, *v* without an external argument does not have a Case feature; this is an element of Burzio's Generalization—no external  $\theta$ -role, no accusative case. But these effects are derivative. Consider the following cases, on the assumption that an internal argument is present (derived from Chomsky 2000):<sup>24</sup> with Case on *v* and no external argument, the Case feature of T will not be checked; with no Case, but with an external argument present, the internal argument will not have Case. Something has to be said about unergative verbs as well; the simplest is that the biconditional *External Argument Case* does not hold. In any case, there is no reason to posit a feature [-external argument] on syntactic grounds, given that any effects this feature might have are subsumed by other derivational mechanisms. An additional possibility is that the *no external argument* property is encoded as an interpretable feature. This would be in addition to such interpretable features as [AG], and perhaps features relating to eventualities and to properties such as 'Inchoativity', associated with *v* heads. In light of the common syncretisms analysed earlier, this type of treatment would necessarily hold that there is a common interpretive component to passives, reflexives, unaccusatives, and so on. The problem lies in specifying what this feature would be; or, what it would be required for in the first place. There do not seem to be any obvious interpretive connections between passives, unaccusatives, and reflexives beyond their structural similarities. For example, it seems highly unlikely, given an analysis of the passive which has an Agentive *v*, no external argument, and so forth, that another interpretable feature is required to indicate that there is no external argument. Given this, there is no reason to posit such a feature, unless its existence is absolutely forced; see Embick (2000) for additional discussion.

<sup>24</sup> With Case and External Argument, we have a normal transitive; without either, an unaccusative.



### 5.5.2. A (partially) lexical alternative

I now turn to a discussion of a Lexical treatment of the reflexive–unaccusative syncretism, found in Reinhart (1997, 2000) and Reinhart and Siloni (in this volume). Before addressing the specific details of these proposals, I will first provide a background discussion of how the lexicon is viewed from the perspective of Distributed Morphology. The interest in doing so is not merely historical. The motivation behind the architecture assumed in Distributed Morphology stems from a series of arguments showing that a generative lexicon of the familiar type is not justified. In assessing a particular lexicalist account, the first question to be asked is whether or not a mode of composition separate from that provided by the syntax is necessary.

The lexicon, as typically defined, served (at least) two roles. First, it is the module of the grammar where a certain type of combination of elements takes place—specifically, the lexicon is the place where *words* are stored and derived. This is the generative aspect of the lexicon: it generates words, while the syntax generates structures in which words are combined into phrases, and so forth. The second role played by the lexicon is as a component in which arbitrary or unpredictable information is simply listed; this is the lexicon in the Bloomfieldian sense. In justifying the existence of such a module, the focus must be on the former aspect, and not the latter. Any theory can (and in fact must) simply encode or list unpredictable information somewhere. The real questions concern the generative aspect of the lexicon, and are questions about modularity—whether the processes deriving *words* are distinct from those that assemble words into phrases. A clear example of the division between lexical and syntactic is the discussion of ‘adjectival’ and ‘verbal’ passives in Wasow (1977). After identifying a number of differences between the two proposed categories, Wasow states his solution in modular terms: Adjectival passives are created in the lexicon, verbal passives in the syntax. The modes of composition for the two differ, and stem from the modular distinction between lexicon and syntax. In a more articulated form, the arguments for modularity cover both the phonological and interpretive domains. In phonology, Lexical Phonological operations were associated with a set of characteristic properties not shared by complex forms created in the syntax (cf. Kiparsky 1982). On the semantic side, lexical entities were taken to have a distinct property as well: the possibility of ‘special’ or idiosyncratic meanings. In contrast, objects created in the syntax could not have such meanings. As Marantz (1997) discusses in detail, the modularity arguments for a generative lexicon break down on both the phonological and semantic branches of the grammar. On the phonological side, the breakdown of the modularity argument is found in cases in which objects that have to be assembled syntactically nevertheless show ‘lexical’ phonology (cf. Hayes 1990 for a statement of the problem from a lexicalist perspective, and Embick 1995 for a case study from a non-lexicalist point of view). Semantically, ‘special meanings’ are not found with simplex lexical items alone, but must be associated with objects created in the syntax. In each case, the breakdown of the modularity arguments points to the same conclusion: there is no generative

lexicon.<sup>25</sup> In the present case, the burden on a lexicalist approach is to show that the operations required to capture a given alternation simply cannot be syntactic, and that they justify the existence of a generative system separate from the syntax.

Reinhart (1997, 2000) proposes that the similarities between reflexives and unaccusatives are the result of a lexical process, Reduction, which alters the argument structure of basic transitive verbs; the general approach relates directly to that presented in Chierchia (in this volume). The statement of reduction as a general process is as in (25).

$$(25) \quad V(\theta_1, \theta_2) \rightarrow R(V)(\theta_n)$$

The R represents a relation—in the derivation of reflexives, a SELF-function. The  $\theta_n$  in the output of the process indicates that either the first or the second of the two original roles may be reduced. In order to derive unaccusatives, the external argument is removed by reduction. In the derivation of reflexives, the claim is that it is the internal argument that is reduced. On this view, unaccusatives have unaccusative syntax, while reflexives do not. The morphological similarity between the two is supposed to stem from the fact that both reflexives and unaccusatives have undergone the same operation. Of course, the operation in the two cases is the same only to the extent that an argument has been removed; if we were to focus on which argument is removed, it would look as if there are two operations at play. The proposal is thus not able to capture the morphological connection between reflexives and unaccusatives straightforwardly; this problem will only multiply as further environments that often pattern in the same way morphologically, such as passives, are taken under consideration.

The discussion of these proposals falls into two components. The first is architectural, and addresses the question of whether the behaviour of reflexives and unaccusatives provides evidence for a generative lexicon. The second part addresses an implication of Reinhart's view, which is that reflexives of the relevant type must be unergative. Reinhart and Siloni (in this volume) provide a set of arguments that attempt to support this claim by showing that reflexives and unaccusatives differ with respect to certain diagnostics. The first objection against these proposals is the most general, and the most telling. The assumption that underlies Reinhart's project is that operations relating to reflexives and unaccusatives are lexical—that is, that they take place in a Lexicon in the sense familiar from Lexical Phonology and Morphology and related theories. The proposals are thus only meaningful to the extent that the existence of a lexicon with operations of the relevant type can be justified. In the present context, Reinhart's Reduction rule can only be justified if it can be shown that it requires a type of operation that is storable only in lexical terms. However, Reinhart provides the relevant argument on this point. Noting the formation of reflexives from small clauses (*Jean se croit intelligent*), Reinhart argues that the reduction that creates this type of reflexives cannot be lexical, but must be syntactic because it involves elements outside of the verb's lexical argument structure. She then notes that 'the reduction operations . . . obey precisely

<sup>25</sup> See also Borer (in this volume) for this position.

the same constraints when they apply in the lexicon and in the syntax' (2000: 15). With no independent reason to suspect that a generative lexicon of the relevant type is necessary, this is precisely the type of anti-modularity argument that makes the lexical treatment unjustifiable. Reinhart acknowledges that a syntactic operation is required in order to handle some of the phenomena that her lexical treatment is intended to handle, and that there is no principled difference between the operation in the two domains. In light of the discussion of the lexicon above, there is therefore no reason to think that unaccusatives and reflexives need to be derived via a lexical operation. That is, there is no lexicon of the relevant type, and therefore no reduction in the lexicon.

We are left, then, with the question of whether there is evidence for a syntactic operation of Reduction, as discussed in Reinhart and Siloni (in this volume).<sup>26</sup> The nature of this operation, when it is syntactic, is as follows. In the derivation of French reflexives, *se* appears as a sort of intransitivizer—its function is to absorb Case. In the syntax the verb has two  $\theta$ -roles, but only one full DP is licensed, by virtue of the aforementioned Case absorption. The application of LF-Reduction identifies the two  $\theta$ -roles, such that they are both assigned to the single DP.<sup>27</sup> A consequence of the Reduction view is that reflexives are unergatives. Reinhart and Siloni argue that reflexives and unaccusatives do not always pattern together, and that the unergative analysis is therefore correct. The arguments share a common property. The underlying assumption in each case is that in the unaccusative analysis of passives, reflexives, and unaccusatives are exactly the same. However, this is not what the unaccusative analysis of reflexives asserts. Rather, this analysis holds that (certain) reflexives share a particular property with unaccusatives. Other differences, such as agentivity, and the presence of a cliticized external argument in some languages, differentiate the two. Many of the facts that Reinhart and Siloni present are thus compatible with either analysis.<sup>28</sup> I will illustrate with an argument based on facts from Italian, which, in addition to exemplifying the point just mentioned, connects with the discussion of the previous section.

The context in question is in reduced relatives in Italian. The pattern with non-reflexives is familiar, with unaccusatives and passives being grammatical in the reduced relative, but unergatives and transitives ungrammatical:

(26) Reduced-relative pattern

L'uomo 'the man'	[arrivato a Milano]	'arrived in Milan'
	[arrestato dalla polizia]	'arrested by the police'
	*[telefonato a suo nonno]	'telephoned to his grandfather'

<sup>26</sup> Reinhart and Siloni suggest that Reduction applies in the lexicon for Hebrew, but in the syntax (more precisely at LF) for languages such as French. The basis for this claim lies in a difference in productivity—only certain verbs are reflexivizable by Reduction in Hebrew, while in French it is generally available. This type of reasoning is a basic tenet of the lexical–syntactic distinction. How the operation could apply in the syntax and still connect reflexives and unaccusatives is not clear.

<sup>27</sup> There is a question here about how the morphological identity between reflexives and unaccusatives could be captured in such a system; but I will continue with the question of whether the syntactic analysis it implies is justified.

<sup>28</sup> Although in the case of Hebrew the arguments offered by Reinhart and Siloni are more straightforward.

The contrast that Reinhart and Siloni base their argument on is in (27); unaccusatives with *si* are possible in reduced relatives, while reflexives with *si* are not:

- (27) a. Il bicchiere [rottosi ieri] apparteneva a mio nonno.  
 the glass broken-SI yesterday belonged to my grandfather  
 'The glass broken yesterday belonged to my grandfather.'
- b. \*L'uomo [lavatosi ieri] è mio nonno.  
 the-man washed-SI yesterday is my grandfather  
 'The man washed yesterday is my grandfather.'

On a syntactic level, the restriction on reduced relatives may be stated as follows: no external arguments in the reduced relative. On the analysis defended here, reflexives are transitive in the sense that they do involve the projection of an external argument, the clitic. Thus the reflexive is crucially unlike unaccusatives and passives, in which no external argument is present at any stage of the derivation. The difference in (26) follows from the fact that 'active' *v*, with an external argument, cannot be the complement of perfect aspect in a reduced relative.<sup>29</sup> From this perspective, then, the reduced-relative facts can be captured by either the unaccusative or the unergative analysis.

A further question is whether this pattern of selection constitutes evidence for the syntactic visibility of a [-external argument] feature. The difference between the reflexives on the one hand and the passives and unaccusatives on the other, is that the former have an external argument (realized as *si*) at a particular stage in the derivation, whereas the passives and unaccusatives never do. This, of course, crucially assumes a treatment of passives that involves no 'suppression' of a merged argument; see Embick (1997). If it is assumed that the head immediately above the *v*P, presumably the aspectual head forming the relative, is sensitive to the presence or absence of a specifier in its complement, then there is no need to posit a [-external argument] feature based on this case. Or the restriction could be derivative of other syntactic principles. A discussion of these issues is found in Iatridou, Pancheva, and Anagnostopoulou (2001), although it is not clear at this point what the relevant factors are and how they are to be captured. However, whatever form this syntactic property takes, it is not the case that this pattern counter-exemplifies the morphological treatment of the *u*-syncretism advanced in section 5.3. As we have seen, the implementation of effects like those related to Burzio's generalization does not refer directly to [-external argument] features; there is therefore no reason to think that whatever factors the reduced-relative generalization reduces to will require such features.<sup>30</sup>

<sup>29</sup> This is on the assumption that reduced relatives are not derived from a clausal structure with *whiz*-deletion; see Bhatt (1999) for further discussions of reduced-relative structures.

<sup>30</sup> There is a further implication if the reduced relative pattern is dealt with in the terms suggested above. If reflexives are excluded from the reduced relative environment because they have an external argument at some stage in the derivation, then the diagnostics for the 'unaccusativity' of reflexives of this type must be sensitive to post-syntactic factors. Thus, for instance, the fact that *be* is selected rather than *have* as the auxiliary for reflexives is a morphological fact, however the conditions are to be stated. Given the full range of factors that seem to play a role in determining auxiliary selection, this conclusion does not seem

Two primary points emerge from the discussion of Reduction-based treatments of unaccusatives and reflexives. First, Reinhart's Reduction-based account explicitly acknowledges that the operation must be syntactic in certain cases, and thus cannot provide evidence that a Lexical derivation is required. Second, the Reduction account is based on the claim that the unaccusative analysis of reflexives is inadequate, and that the reflexives in question are really unergative. While Reinhart and Siloni (in this volume) identify a number of questions about the unaccusative analysis of reflexives as applied to Romance, it seems clear that these points do not impact directly on the analysis of the u-syncretism presented in the last section.

## 5.6. CONCLUSIONS

The concerns of this chapter have been primarily morphosyntactic, and have been directed at the nature of the morphological pattern that unites a number of distinct constructions, the u-syncretism. Following a strong hypothesis about the syntax–morphology interface, the arguments presented above show that the u-syncretism is centred on the absence of an external argument. Further arguments showed that this pattern arises when morphology is underspecified with respect to syntax, and treats passives, reflexives, and unaccusatives in the same way because each of these configurations lacks an external arguments. This underspecification-based approach, which holds that features or morphological exponents that appear in the u-syncretism are morphological, was shown to be superior to alternatives based on syntactico-semantic features and Lexical operations.

As is always the case, a number of questions remain, one of which I will now address. In the discussion of reflexives throughout the chapter, we have seen many syntactic structures associated with reflexive interpretations. One question that such patterns raise is whether or not one should expect a more uniform syntactic encoding of this sort of semantic phenomenon. For instance, much of the motivation behind the Reduction-based approach developed by Reinhart stems from the desire to offer a uniform semantic operation for all types of notional reflexivization. At a morphosyntactic level, it appears that there are different ways of deriving reflexive interpretations, both within and across languages. In addition to what we have seen earlier in the various case studies, consider English examples of the type *John hit himself*, *Mary washed*, *Susan got dressed*, and *Fred self-destructed*, each of which is notionally reflexive, while showing apparently distinct syntactic configurations. A further assumption is that Reduction as an operation drives syntactic considerations. In view of the morphosyntactic heterogeneity of the structures that are interpreted reflexively, it seems that this

implausible; cf. also the distinction between 'deep' and 'surface' unaccusativity from Levin and Rappaport (1996). Reinhart and Siloni (this volume) identify problems with the use of auxiliary selection as an unaccusativity diagnostic, however, suggesting that further factors must be considered.

assumption should be reversed. Assuming that an operation like Reduction is needed for the semantics of reflexivization, one could say that Reduction is triggered by certain configurations generated by the syntax. Recall the idea that Reduction is required at LF for languages like French, suggesting that it would be possible to develop a uniformly LF-based notion of this operation. The idea that there is a uniform semantic basis for reflexive interpretation could then be maintained. This of course assumes that an operation like Reduction is required for the semantics of reflexivization—which is another topic altogether.