THE CASE OF UNACCUSATIVE MISMATCH IN ENGLISH

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Abstract: The paper examines the unaccusative-unergative dichotomy of predicates, with a special focus laid on the class status of the verb *TO DIE* in English. The paper begins with a view of unaccusativity in the light of the Lexicon-Syntax Interface. Further, the verb *TO DIE* is tested against the six syntactic unaccusativity diagnostics valid for English. In consequence, the first three diagnostics (auxiliary selection, causative alternation and resultative constructions) do not work for the verb *TO DIE*, while the last three diagnostics (adjectival participle, *there*-insertion, locative inversion) appear to have been satisfied. This would lead us to the conclusion that the verb *TO DIE* should be regarded as a real example of an Unaccusative Mismatch (Levin 1986).

Keywords: intransitive predicates, unaccusativity diagnostics, reflexive constructions, adjectival principles, *there*-insertion and locative inversion.

1. Introduction

Unaccusativity proves to be of a great significance within the debate upon the dual nature of verbs, their syntactic and lexical semantic characteristics, and the mutual relationship between these two features (Levin and Rappaport Hovav 1995: 2). Perlmutter's (1978) original hypothesis recognises unaccusativity as both syntactically encoded and semantically foreseeable. However, some verbs predicted to be unaccusative or unergative on the basis of semantic or syntactic diagnostics, do not meet the expectations. These imperfect matches, called "Unaccusative Mismatches" (Levin 1986), have developed two standpoints on unaccusativity: the syntactic approach, refuting unaccusativity as fully semantically predictable, and the semantic approach, negating unaccusativity as syntactically encoded.

The aim of this article is to determine the class status of the verb *TO DIE* in English, which although taken for granted as unaccusative by the encyclopaedic definition, does not represent a class of pure unaccusatives. Thus, if intransitive in nature, what class does this verb really belong to: unaccusative or unergative? To solve this problem the verb will be tested against the unaccusativity diagnostics postulated in the literature for English since Burzio (1986), and adopted by Levin and Rappaport Hovav (1995) and Alexiadou et al. (2004), among others. In section 2, the key syntactic characteristics of unaccusative verbs are briefly outlined. Next, in section 3, the verb under scrutiny is tested against the generally recognised six diagnostics of unaccusativity, i.e., (i) auxiliary selection, (ii) causative alteration, (iii) resultative constructions, (iv) adjectival participles, (v) *there*-insertion, and (vi) locative inversion. In section 4, the issue of Unaccusative Mismatches is presented, and it is pointed out that the verb *TO DIE* can be subsumed under this notion. Finally, section 5 provides conclusions related to the debate concerning the unaccusative vs. unergative status of the English verb *TO DIE*.

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2. Unaccusativity in the light of the lexicon-syntax interface

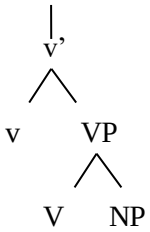
The Unaccusative Hypothesis, originally introduced by Perlmutter (1978, 1989) on the ground of the Relational Grammar, but later adopted by Burzio (1986) within the GB framework (Chomsky 1981), divides the class of intransitive verbs into two syntactically different but semantically similar subclasses, i.e. the unaccusative verbs and the unergative verbs. Thus, the class of intransitives is far from being homogenous.

However, Alexiadou et al. (2004: 2) observe that such a division of the class of (monadic) predicates is only relevant within the theory which distinguishes between subject and object, that perform the grammatical functions of proto-agent and proto-patient. Thus, the Relational Grammar treats unaccusatives as verbs with a final subject that initially takes the role of a direct object; whereas, a final subject of unergatives used to be an initial subject at first. From the GB perspective, an unergative verb receives a theta-marked deep-structure subject and no object, while an unaccusative verb takes a theta-marked deep-structure object (cf. Alexiadou et al. 2004: 2), as schematized in (1):

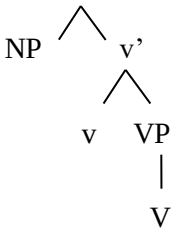
(1)	a.	NP [$_{VP}$ V]	unergative	Kate dances.
	b.	[$_{VP}$ V NP]	unaccusative	Kate fell.

The notion of VP-shells, introduced by Larson (1988), and the VP-internal subject hypothesis, proposed by Koopman and Sportiche (1991), Kitagawa (1986), Kuroda (1988), have brought a change in the very nature of A-movement. Within some theories in the "light-v" framework, the difference between unaccusative and unergative verbs lies in that the subject of an unergative verb is introduced by a semi-functional head v, whereas the unaccusative argument belongs to the lexical verb (Chomsky 1995), as illustrated in (2):

(2) a. (Unaccusative)



b. (Unergative)



(Alexiadou et al. 2004: 14, example (32))

Taking an argument structure of a given verb into consideration (Perlmuter 1978), an unergative verb has an external argument but no direct internal argument. An unaccusative verb, in turn, is defined as the one that takes an internal argument but no external one; and this definition of unaccusative verbs is adopted for the sake of this paper.

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In this paper, Levin and Rappaport Hovav's (1995: 281-283) typology of intransitive verbs, based on Levin's (1993) taxonomy, is adopted. In this typology, the verb *TO DIE* is treated as a member of a semantically coherent class of disappearance verbs, together with *disappear, expire, lapse, perish, vanish*.

3. The verb *TO DIE* against unaccusativity diagnostics

Assuming that unaccusativity is a syntactic property, even though it is semantically predictable, Levin and Rappaport Hovav (1995: 16) underline the necessity for any unaccusative diagnostic to be legitimate and valid. Therefore, a valid unaccusative diagnostic would test for a syntactic property, whose explanation is related to the unaccusative syntactic configuration. Besides, taking unaccusativity to explore the mapping between lexical semantics and syntax, syntactic means of identifying unaccusative verbs should be used to have an independent check on the hypotheses about the semantic determination of unaccusativity.

The aim of this section is to test the English verb *TO DIE* against the most frequently applied diagnostics of unaccusativity that have been used since Burzio (1986), by Levin and Rappaport Hovav (1995) and scrutinised by Alexiadou et al. (2004), i.e. (i) auxiliary selection, (ii) causative alteration, (iii) reflexive constructions, (iv) adjectival participles, (v) *there*-insertion, and (vi) locative inversion. The key goal of this study is to check if the English verb under scrutiny meets the expectations of these unaccusativity tests, and finally what class of intransitive verbs it represents after all.

3.1 Unavailability of auxiliary selection diagnostic for Modern English

To begin with, unfortunately, the auxiliary selection diagnostic, although one of the widely acknowledged and valid diagnostics for most Romance and Germanic languages,[2] cannot be applied to English and Spanish. The auxiliary selection is made dependent upon theta-grid properties of the verb (Everaert 1996: 27). In languages that use two different temporal auxiliaries (*have* and *be*) for analytic past/perfect verb forms (e.g. German, Dutch, French, Italian, even Early Modern English), unaccusative verbs combine with *be*, while unergative verbs combine with *have*, as exemplified in (3).

(3) a. for French:
unaccusative: *Je suis tombé.* lit. 'I am fallen.' (= 'I have fallen.')
unergative: *J'ai travaillé.* 'I have worked.'
b. for Italian:
unaccusative: *È arrivato.* lit. '[He] is arrived.' (= 'He has arrived.')
unergative: *Ha telefonato.* '[He] has phoned.'
c. for German:
unaccusative: *Ich bin angekommen.* '[I] am arrived.' (= 'I have arrived.')
unergative: *Er hat geschlafen.* '[He] has slept.'

[2] See Burzio (1986), Grewendorf (1989), Perlmutter (1978), Levin and Rappaport Hovav (1995), among others.

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d. for early Modern English (*Online World Heritage Encyclopedia)*:[3]
unaccusative: *But which of you ... will say unto him ... when he is come from the field, Go and sit down...* (King James Bible, Luke XVII:7, cited in *Online World Heritage Encyclopedia*)
unergative: *The grease solidifies - The grease has solidified.*

Nonetheless Modern English only uses one perfect auxiliary (*have*); although, archaic examples like 'He is fallen/come' reveal the use of *be* with unaccusative verbs in earlier stages of the language. As a result, the English verb *TO DIE*, although having its unaccusative counterpart sensitive to this diagnostic in e.g. German cannot be tested by means of the auxiliary selection test.

Surprisingly, since the verb *TO DIE* originates etymologically from Middle English (1150-1200) verbs *dien*, *deien*, *deȝen*, from Old English *dīġan*, *dīeġan* 'to die' and Old Norse *deyja* 'to die, pass away', both from Proto-Germanic **dawjana* 'to die', as noted in *Encyclopedia of Indo-European Culture* (1997: 150), the auxiliary 'be' must have been used then for all verbs, including the verb *TO DIE* (see (18d)). Indeed, as exemplified by Google Books Corpus, the forms of 'is/was died' may be found in the literature, e.g. *Then I knew that the Messenger of God* ***is died***.[4]; *His elder brother* ***was died*** [5].

Additionally, Everaert (1996: 27) argues that the choice of auxiliary depends mostly on the semantic properties of the verb, but more precisely the telic/atelic or perfective/imperfective distinction would be the determining factor. Telic monadic verbs, as illustrated by the German verbs in (4a) would take *sein*, while atelic monadic verbs as in (4b) take *haben* (for a more detailed analysis cf. Everaert 1996):

(4) a. *ankommen, fallen, sterben, aufgehen*, etc.
'to arrive, fall, die, go up, etc.'
b. *stehen, wohnen, schlafen, warten*, etc.
'to stay, live, sleep, wait, etc.'

As mentioned above, the unaccusative/unergative distinction in intransitive verbs can be explained semantically. Indeed, unaccusative verbs are more likely to express a telic and dynamic change of state or location, while unergative verbs tend to express an agentive activity (without directed movement).

Moreover, more recently, as a wider range of data on auxiliary splits has entered the discussion, some scholars have argued that a more descriptive framework than a simple two-way split is needed to explain the variation. The best known among these is

[3] The modal auxiliaries cemented their distinctive syntactic characteristics during the Early Modern period. Thus, the perfect of the verbs had not yet been standardised to use uniformly the auxiliary verb 'to have.' Some took as their auxiliary verb 'to be,' as in this example from the King James Bible, "But which of you ... will say unto him ... when he is come from the field, Go and sit down..." [Luke XVII: 7]. The rules that determined which verbs took which auxiliaries were similar to those still observed in German and French.
[4] Al-Jubouri (2010).
[5] *The Dublin Review* XIII (1857).

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Sorace's (2000) Auxiliary Selection Hierarchy (ASH). On the basis of languages from the Romance and Germanic families, she formulated the ASH, in which verbs are ranked, with the use of semantic factors, as regards the probability of their taking *be* or *have* auxiliary selection in the perfect tense. The ASH is shown in Table 1, with examples from each class of verbs included.

Table 1. The Auxiliary Selection Hierarchy (Sorace 2000: 863)

BE	Change of location	*come, arrive, leave, fall …*
▲	Change of state	*rise, become, decay, die, be born, happen …*
‖	Continuation of a pre-existing state	*stay, remain, last, survive, persist …*
‖	Existence of state	*be, belong, sit, seem, be useful, depend on …*
‖	Uncontrolled process	*tremble, catch on, skid, cough, rumble, rain …*
▼	Controlled process (motional)	*swim, run, walk …*
HAVE	Controlled process (non-motional)	*work, play, talk …*

As illustrated in Table 1, the higher a verb is in the hierarchy, the more strongly it prefers auxiliary *be*, the lower it is, the more strongly it prefers *have*. Undoubtedly, languages differ as to where they draw a line between *have*- and *be*-selecting verbs. Used with intransitives, the auxiliary *be* is generally taken to be a diagnostic of unaccusativity in these languages, and auxiliary *have* of unergativity.

Finally, cross-linguistically synonymous verbs do not always choose the same auxiliary, and even within one language, a single verb may combine with either 'have' or 'be'. This may either depend on the meaning/context (either telic or atelic), or be connected with no observable semantic motivation, or it sometimes depends on regional variation of the language. The auxiliary selection criterion therefore also identifies core classes of unaccusative and unergatives, which display the least variation within and across languages.

3.2 Failure of the causation alteration diagnostic for the verb *TO DIE*

Levin and Rappaport Hovav (1995: 79-80) claim that unaccusative verbs participate in the causative–inchoative alternation, while unergatives do not. Causative alternation as a cross-linguistic phenomenon concerns certain verbs that express a change of state (or a change of degree) and can be used transitively or intransitively. A causatively alternating verb, such as *open*, has both a transitive meaning, as in (5a), and an intransitive meaning, as in (5b):

(5) a. Transitive Use (Causative): *Maria opened the door.*
b. Intransitive Use (Anticausative): *The door opened.*

When causatively alternating verbs are used transitively, they are referred to as causatives because, in the transitive use of the verb, the subject is causing the action denoted by the intransitive version. Thus, the transitive use has roughly the meaning 'cause to *V*-intransitive' (Levin and Rappaport Hovav 1995: 79). Once causatively alternating verbs are used intransitively, they are called anticausatives or inchoatives

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because the intransitive variant describes a situation in which the theme participant (in this case *the door*) undergoes a change of state, becoming, for example, 'opened' (Schäfer 2009). The general structure of the causative and anticausative variants of the causative alternation in English is presented in (6):

(6) The Causative Alternation:
a. Causative: agent Verb-transitive theme
b. Anticausative: theme Verb-intransitive

The causative alternation[6] as a transitivity alternation has an external argument (*Maria*), which bears the theta role agent which is not present in the intransitive alternative. The object of the causative alternative (*the door*) bears the same thematic role of theme as the subject of the anticausative alternative (also *the door*).

Furthermore, most unaccusative verbs participate in the causative alternation, as in a well-known example in (7a). The unaccusatives that do causatively alternate are anticausative verbs (like 'break') which make up a subclass of unaccusative verbs called alternating unaccusatives. The other subclass of unaccusative verbs, pure unaccusatives, consists of all other unaccusatives (like 'fall') that do not take part in the causative alternation. However, the causative alternation is never exhibited by an unergative (like *laugh*), as illustrated in (7b), after Schäfer (2009: 641):

(7) a. Causative alternation of unaccusatives:
The vase broke. / He broke a vase.
b. Non-Alternation of unergatives:
*The crowd laughed. /*The comedian laughed the crowd.*
(Intended meaning: 'The comedian made the crowd laugh.')

In addition, Levin and Rappaport Hovav (1995) propose that the causative alternation is one of the most important syntactic tests for unaccusativity in English. Besides, they introduce the notions of internally caused and externally caused eventuality types, when the former one is an eventuality in which "some property inherent to the argument of the verb is 'responsible' for bringing about the eventuality" (Levin and Rappaport Hovav 1995: 91). Agentive intransitive verbs such as *play* and *speak*, or some non-agentive verbs taking animate arguments such as *blush* and *tremble* are internally caused, since the subject argument is the agent of the event. Even verbs with inanimate arguments can be internally caused, e.g. verbs of emission, such as *burble* (sound emission), *flash* (light), *stink* (smell), and *ooze* (substance). The eventualities described by these verbs happen only because of the subject argument (Levin and Rappaport Hovav 1995: 92).

[6] Besides the causative alternation, Levin and Rappaport Hovav (1995: 36) argue that English also has a "periphrastic" causative, which is expressed with the verbs *make* or *have*, as illustrated in *Antonia made the vase break*. It has often been noted that the notion of "cause" that enters into the relation between the transitive and intransitive uses of the alternating verbs allows for a more restricted range of interpretations than that found in English periphrastic causatives.

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On the other hand, externally caused verbs "imply the existence of an 'external cause' with immediate control over bringing about the eventuality described by the verb: an agent, an instrument, a natural force, or a circumstance" (Levin and Rappaport Hovav 1995: 92). According to Levin and Rappaport Hovav (1995), the reason why internally caused verbs fail to alternate has to do with linking rules. Linking rules relate positions in the semantic representation associated with a verb with positions at the level of argument structure. The first element in the list of internal arguments is mapped to the direct object position when the external argument is mapped to the subject position, but can otherwise surface as the subject of the clause (Williams 1980, 1983; Grimshaw 1990). Using these assumptions about argument structure, Levin and Rappaport Hovav (1995: 144) posit a linking rule that maps the immediate cause to the external argument position (the "Immediate Cause Linking Rule"). As an external argument, the immediate cause surfaces as the syntactic subject, whether it is an internal cause or an external cause. As noted by Levin and Rappaport Hovav (2005: 70), the concept of immediate cause can perhaps be identified or replaced with Van Valin and Wilkins's (1996) notion of effector, which is defined as "the dynamic participant doing something in an event" (van Valin and Wilkins 1996: 289). They argue that the notion of "effectorhood" is more relevant to argument realization than the notion of agency, which they take to be a cancellable pragmatic entailment rather than a lexical specification in most cases.

Finally, cross-linguistically it has been argued that the verbs participating in the causative alternation are verbs that denote movement or a change of state or degree. Nonetheless, not all change of state verbs are anticausatives and therefore, not all of them participate in the causative alternation. This can be illustrated with a change of state verb like *bloom*, which does not show a causative alternation, as it is a pure unaccusative. Even though it is possible to say that *The cactus bloomed*, it is ungrammatical to say that *The warm weather bloomed the cactus* (Schäfer 2009: 641).

On the other hand, testing the English verb *TO DIE* against the causation alteration diagnostic in order to prove its unaccusative/unergative status, would lead to a conclusion that this verb does not alternate, as shown in (8):

(8) a. *Philip died.*
b. **The soldier died Philip.* (Intended meaning: 'The soldier made Philip die.')

Apparently, sentence (8) differs from (7a) and is similar to (7b). In this case, I would opt for the existence of arbitrary exceptions to the rule of causation alteration possibility, with a claim, taken after Bowerman and Croft (2008: 284), that "there are verbs that satisfy the restrictions and yet do not alternate." The verbs that Bowerman and Croft (*ibid*.) mention are: *go*, *disappear*, *cling*, *glow*, *DIE*, *knock* (*down*), and *lose*. Similarly, Braine and Brooks (1995) treat the verb *TO DIE* as a member of non-caused class verbs, classifying it with the verbs of disappearance, like Levin (1993) and Levin and Rappaport Hovav (1995: 281-283). Since the causative alternation does not yield any conclusive results, a different diagnostics is necessary to test the status of the verb *TO DIE*.

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3.3 Inapplicability of resultative phrases diagnostics to the verb *TO DIE*

Resultative constructions are set syntactic patterns applied to express a change in state as the result of the completion of an event (Levin 1993). In other words,

> A hallmark of the English resultative construction is the presence of a result XP – an XP denoting a state or location that holds of the referent of an NP in the construction as a result of the action denoted by its verb.
>
> (Rappaport Hovav and Levin 2001: 766)

Resultative phrases may be predicated only of the object of a transitive verb, never of the subject, as in (9) (see Goldberg and Jackendoff 2004: 543):

(9) a. The gardener watered the tulips *flat*. (resultative phrase as an AP)
b. Bill rolled the ball *down the hill*. (resultative phrase as a PP)

As far as intransitive verbs are concerned, Levin and Rappaport Hovav (1995: 35-39) assert that they are divided into two groups: unaccusatives (10a-b), which appear with resultative phrases, and unergatives (10c), which lack these constructions unless they insert a "fake" reflexive, as in (10d):

(10) a. The river froze *solid.* unaccusative
b. The bottle broke *open / into pieces.* unaccusative
c. *Dora shouted *hoarse.* unergative
d. Dora shouted herself *hoarse.* unergative
e. The dog barked [$_{sc}$ him awake] unergative

Levin and Rappaport Hovav (1995, 2005) adopt the so-called "Direct Object Restriction" (DOR), based on Simpson's (1983: 142) and Hoekstra's (1988: 119) generalization made for English. According to the *DOR*, the controller of a resultative attribute has always the function of an object, regardless of whether it is a surface object, as in transitives, or an underlying object as in the case of unaccusatives in (10a) and (10b), or a fake reflexive, as in the case of unergative verbs, as in (10d). In addition, Levin and Rappaport Hovav (1995) argue that *him* in (10e) functions as a subject of a small clause, rather than a direct object of the verb *bark*. Therefore, to account for (10e), they propose a reformulation of the DOR, and adopt the "Change-of-State Linking Rule". According to the rule, it does not matter whether the postverbal NP in unergative resultative constructions is a direct object or the subject of a small clause, unless it is governed by the verb (Levin and Rappaport Hovav 1995: 51; cf. Landau 2003; Matushansky et al. 2012).

Moreover, cross-linguistically a resultative construction is either an adjectival phrase specifying the state of a noun resulting from the completion of the event denoted by the verb, a prepositional phrase, or a verbal construction denoting the result state of an event. However, English does not have a verbal resultative construction, which may appear in, e.g. Mandarin instead, as outlined by Li (2011) in (11):

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(11) Zhangsan ca-ganjing le zhuozi
Zhangsan wipe-clean PERF table
'Zhangsan wiped the table clean.'

In this example, the resultative *ganjing* is situated within the verb aspect construction. The verb *ca-* discharges the theta roles of agent and experiencer.

Even though Levin and Rappaport Hovav (1995: 56) assume that all unaccusatives can form resultative constructions, they further argue that all stative verbs, including unaccusative stative verbs, such as *remain*, or *appear*, as in (12a), are incompatible with resultative phrases. Besides, also verbs denoting inherently directed motion, e.g. *escape*, *come*, *go*, and *arrive*, as in (12b), do not combine with resultative phrases.

(12) a. *Natalie appeared *famous*.
b. *She escaped *breathless*.
c. She danced /swam *free of her captors*.

By contrast, agentive manner-of-motion verbs do occasionally appear in resultative constructions, as in (12c) (Levin and Rappaport Hovav 1995: 186). Verbs such as *swim* and *dance* are usually classified as typical unergatives, since they neither form adjectival past participles nor participate in the causative alternation, whereas they do occur with fake reflexives (cf. 10d). Levin and Rappaport Hovav (1995: 186) explain that verbs like *dance* and *swim* develop a sense of directed motion and as such assume the resultative pattern, as in (12c).

As far as the verb *TO DIE* is concerned, while testing it against the resultative phrase, the following collocations from the Corpus of Contemporary American English (COCA), given in (13), are found acceptable.

(13) a. Mark died *young* / *penniless* / *alone* / *happy* / *childless* / *unmarried*, etc.
b. *Sheila died *stiff*.

As can be seen in (13), the verb *TO DIE* should not be treated here as (i) a transitive verb, since obviously there is no post-verbal direct object; (ii) a representative of unergative verbs, which do not appear in resultative structures unless they form fake resultatives with the use of reflexives, as in (10d); or the postverbal NP is the subject of a small class, as in (10e); (iii) an agentive manner-of-motion verb, since there is no motion in *dying*. Nonetheless, assuming that the verb *TO DIE* has an unaccusative status, the question to find an answer for is whether the post-verbal adjective phrases given in (13a) are the true resultative phrases, or just adjunct adjective phrases/depictive constructions added to the sentence to modify the surface subject.

To be precise, the very definition of the resultative phrase implies a strict connection between the verb and the resultative, and the latter must be the result of the action denoted by the verb. Thus, analysing the examples from (13a), the question is whether Mark's death has brought the result of him being *young*, *penniless*, *alone*, *happy*, *childless*, *unmarried*, etc. The answer seems to be obvious, and it would be logical to assume that these "states" expressed by the adjectives in (13a) are not the direct results of

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Mark's death. Instead, the adjective phrases in (13a) are depictive predicates that characterize the state of an NP at the time of the initiation of the main predicate's action (Lee 1995: 55). In fact, just before and at the time of his death, Mark must have been *penniless* or *unmarried*, etc. On the other hand, the example in (13b) would be a perfect instance of resultative, since being *stiff* is the direct result of one's (Sheila's) death. Unfortunately, there are no such sentence patterns available in the COCA Corpus.

In a nutshell, the verb *TO DIE*, as a representative of verbs of disappearance class, belongs to the change of state verbs in its very nature, and the change of state is somehow assigned to these verbs. Even though the members of this verb class, as unaccusatives, are supposed to form resultative phrases, the verb *TO DIE* fails this diagnostics.

3.4 Post-nominal adjectival past participles vs. the verb *TO DIE*

Transitive verbs accept participles as attributive predicates of the nouns that function as their direct objects, as shown in (14a). In the case of intransitive verbs, such prenominal adjectival forms cannot be formed from unergative verbs (Shardl 2010: 17), contrary to unaccusative verbs, as illustrated in (14b) and (14c) respectively (see Williams 1981, Hoekstra 1984, Levin and Rappaport Hovav 1995, Grewendorf 1989, Grimshaw 1990, Zaenen 1993):

(14) a. a *bought* pen (transitive verb)
b. *the *phoned* girl (unergative verb)
c. a *fallen* angel (unaccusative telic)
d. *an *appeared* actor (unaccusative atelic verb) but: a recently *appeared* book.

Prenominal perfect participles are usually supposed to modify the S-Structure subjects of unaccusative verbs, as in (14c), but not unergative verbs, as in (14b) (Zaenen 1993: 140). However, as scrutinised by Levin and Rappaport (1995: 151), such participles are formed only from telic intransitive verbs. Therefore, due to the telicity restriction, this test is also inapplicable to verbs of existence, as seen in (14d).

On the other hand, verbs of disappearance (e.g. *to disappear, to expire, to lapse, to perish, to vanish*), which denote an internally caused change of state and are telic, seem to be actually by far the most productive in this construction, as the data from the Corpus of Contemporary American English in (15) prove:

(15) a. *vanished* civilisations / *expired* credit cards / two *disappeared* people
b. *the *happened* event.

The unacceptability of the prenominal perfect form for other classes of the unaccusatives which denote telic situations, as illustrated in (15b), can be justified by either simply incompatibility of the past participle with an NP-internal position (as illustrated in (16)), or with the possibility to occur either only in the prenominal position or only in the post-nominal position as in (17), as exemplified by Borgonovo and Cummins (1998: 107).

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(16) **receded* tiles / **fled* civilians / *mountain-climbers *plunged* to their deaths / *subsequently *ensued* events

(17) a. *departed* guests / *guests *departed* in a huff;
b. a repairman *come* to check the pipes /*a recently *come* repairman
c. the newly/recently *arrived* immigrant / *an *arrived* refugee.

Moreover, some past participle constructions of telic unaccusatives are quite restrictive with respect to the type of arguments and the type of modifiers they can take (Borgonovo and Cummins 1998: 107):

(18) a recently *appeared* book /*a recently *appeared* explorer /*a recently *appeared* planet

(19) recently *arrived* guests /*tardily *arrived* guests /*early *arrived* guests /*already *arrived* guests /*hurriedly *arrived* guests /*subsequently *arrived* guests.

These empirical data show that more than telicity should be taken into account to distinguish between those unaccusatives whose past participle can and those whose past participle cannot be used in an NP-internal position. Borgonovo and Cummins (1998) suggest that telic unaccusatives fall into two classes: (i) unaccusatives which depict a change of state (*rot*) and (ii) unaccusatives which depict a change of location (*arrive*). Even though the verbs in both classes are telic, denoting a process that culminates in a state, the nature of this final state differs since it is either an accidental 'property' of the argument (class (i)), or the final state is a "place" or a "location" (class (ii)). The verbs belonging to the former class have only a stative reading and can appear within NPs without restrictions, e.g. *blistered* feet. Whereas the unaccusatives fitting in the "place" class are less felicitous, having sometimes both meanings: strictly a location (?a *fallen* child), 'a fully-specified state' (*fallen* leaves) (Borgonovo and Cummins 1998: 108-109).

Finally, Levin and Rappaport Hovav (1995: 151) summarise that even though adjectival perfect participles are formed only from telic intransitive verbs, the derivation of such participles from unaccusative and passive verbs appeals to the syntactic properties of the verbs. This makes prenominal participles a valid unaccusative diagnostic, although the specific context makes a big difference here whether to accept or not certain collocations, e.g. *the* ***risen*** *Christ and the* ***risen*** *sun* but **the* ***risen*** *balloon* (Baker 2013). In short, this variation is not necessarily problematic, and Sorace (2000: 868) argues that all verbs in the same class are not expected to show the same behaviour, but rather core classes should show less variation than non-core ones.

While most verbs of disappearance (e.g. *to disappear*, *to expire*, *to lapse*, *to perish*, *to vanish*), with their meaning of an internally caused change of state and telicity, appear with adjectival perfect/passive participles, as illustrated in (15a), some instances of disappearance verbs are ungrammatical in this context, as exemplified in (20a).

(20) a. *a *DIED* uncle
b. *the *happened* event
c. an uncle *DIED* in an accident

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The unacceptability of the prenominal perfect form of the disappearance verb *TO DIE* in (20a), similarly to other classes of the unaccusatives which denote telic situations as in (20b), has been already explained by Borgonovo and Cummins (1998: 107), who underline the constraint of certain verbs to occur either only in the prenominal position, or only in the post-nominal position, as reproduced in (16)-(17). Additionally, some past participle phrases of telic unaccusatives are restricted to a specific kind of arguments or modifiers they can go with (Borgonovo and Cummins 1998: 107), as shown in (18)-(19). Similarly, following the rules and constrains just discussed, the instances in (20a, 20c) highlight the impossibility of the pre-nominal position of the participle *DIED*, and a full acceptance for the post-nominal position of the past participle of this verb. To conclude, the verb *TO DIE* satisfies this kind of diagnostic for unaccusativity.

3.5 *There*-insertion and locative inversion vs. the verb *TO DIE*

The two remaining diagnostics (Levin and Rappaport Hovav 1995: 19) mark the only type of surface unaccusativity present in English. In both the *there*-insertion construction in (21) and the locative inversion construction in (22), the single argument of the intransitive verb appears to be in the syntactic position of the object of a transitive verb. These structures are claimed to be permitted with unaccusative but not unergative verbs (Shardl 2010: 21-23).

(21) *There*-insertion
  a. *There appeared* a lady on the scene.
  b. **There laughed* a girl in the room. (unergative verb)
(22) Locative inversion
  a. *Into the room came* a man. (unaccusative verb)
  b. **In the room laughed* a girl. (unergative verb)

For Levin and Rappaport Hovav (1995: 151), the strongest evidence for an unaccusative classification of the simple position verbs in English comes from their behaviour in the *there*-insertion construction, in the pattern *there* V NP PP, that is, with the NP inside the PP. However, it is worth being aware of some unaccusative verbs which fail this test, as illustrated in (23), unless a proper context is given, or the verb has an agentive reading (Levin and Rappaport Hovav 1995: 152).

(23) **There fell* a man on the street. / *There fell* the autumn leaves in their garden.

As far as locative inversion constructions in English are concerned, they are clearly distinguishable from PP fronting via topicalization, although the two constructions share the discourse constraint that the fronted PP represent relatively more familiar information in the discourse (see Birner 1994). Besides the difference in the position of the subject, locative inversion also differs from PP topicalization in that it is subject to a number of syntactic constraints: the verb must be intransitive (but not necessarily unaccusative, see Levin and Rappaport 1995), and the fronted PP must be an argument, not an adjunct. Moreover, according to Levin and Rappaport Hovav (1995: 265), the major difference

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between locative inversion constructions with unaccusative and unergative verbs involves the D-structure location of the post-verbal NP. This is demonstrated by the data in (24):

(24) a. *In the room was* a man. (unaccusative verb)
b. *In the room came / worked / *talked* a man.[7] (unergative verb)

When it comes to the verb *TO DIE*, it satisfies the *there*-insertion diagnostics, as shown in (25a), and the locative inversion, as confirmed by (25b):

(25) a. *There DIED* a myriad. (*there*-insertion)
b. this year also *DIED* the possibility of turning the cup races […]
the only instance found in the literature by Levin and Rappaport Hovav (1995: 303) (locative inversion)

Even though these constructions with the verb *TO DIE* are rarely used, and are mostly found in literature (as specified by the Corpus of Contemporary American English), the verb *TO DIE* does pass these two diagnostics.

4. Unaccusative Mismatches

Some verbs predicted to be unaccusative or unergative on the basis of semantic or syntactic diagnostics, do not satisfy those diagnostic requirements. These imperfect matches, called "Unaccusative Mismatches", display a clash between the results of two or more unaccusative diagnostics (Levin 1986, Grimshaw 1987, Zaenen 1993).

Levin and Rappaport Hovav (1995: 4-5) described Unaccusative Mismatches as "cases in which there seems to be an imperfect match between the verbs expected to be selected on semantic or syntactic grounds as unaccusative or unergative by various diagnostics and the verb actually selected by those diagnostics". In short, they meant a situation in which different unaccusative diagnostics single out different classes of intransitive verbs within and across languages. Therefore, these imperfect matches have given rise to two standpoints on unaccusativity: (i) the syntactic approach (represented by Rosen 1984), refuting unaccusativity as fully semantically predictable, and (ii) the semantic approach (represented by van Valin 1990), rejecting the view that unaccusativity is syntactically encoded. Taking into consideration the unaccusativity versus unergativity distinction, Levin and Rappaport Hovav (1995: 14) developed an alternative approach, which recognises the syntactic classification of verbs as semantically determined, confirming Perlmutter's (1978) original hypothesis about unaccusativity as both syntactically encoded and semantically foreseeable.

In section 3, the English verb *TO DIE* has been tested against six unaccusativity tests. It has been shown that the first three diagnostics do not work for the verb *TO DIE*,

[7] The examples are taken from Baker (2013), who judges their grammaticality on the basis of his own intuitions, and notes, after Shardl (2010: 21), that there are a lot of "mixed" grammaticality judgements with regard to this construction.

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i.e. auxiliary selection (not applicable to all verbs of Modern English), causative alteration (since the verb *TO DIE* represents non-caused disappearance verb class, as argued by Levin (1993) and Levin and Rappaport Hovav (1995: 281-283)), and resultative constructions. The failure to satisfy all or at least most diagnostic tests offered in the literature has led us to the conclusion that the English verb *TO DIE* cannot be classed as unaccusative, neither can it be associated with the status of an unergative verb. Instead, it should be treated as an instance of Unaccusative Mismatches.

On the other hand, for Tenny (1987) interestingly, even if the syntactic unaccusativity diagnostics fail, there is telicity as the classifying semantic aspect. Unaccusative verbs have a tendency to be telic, whereas unergative ones are expected to be atelic. Furthermore, for Rosen (1984), relying only on the meaning of a verb, its unaccusative/unergative properties cannot be defined, due to unaccusativity mismatches and the fact that no single semantic property is common to all unaccusative verbs, selected by all diagnostics in several languages. The verb *TO DIE*, is given by Rosen (1984) as an example, since it is unergative in Choctaw but unaccusative in Italian. Besides, Levin and Rappaport Hovav (1995) claim that there are certain aspects of meaning, such as the semantic notions of activity and change of state, and internal and external causation, that help to determine whether a verb is unaccusative or not. Consequently, provided a verb appears as syntactically unaccusative, it carries an accomplishment-achievement/external causation reading; and the other way round, as long as unergative syntactic properties are assigned to a verb, then it is destined to have activity/internal causation reading. In short, along with this standpoint, both classes of the intransitive verbs have their distinctive syntactic-diagnostics and semantic characteristics. Certain verbs show a mixed behaviour if only they are attuned to both types of interpretation.

5. Conclusions

To conclude, there are two types of unaccusative diagnostics (Levin and Rappaport Hovav 1995: 19), diagnostics of surface unaccusativity (such as, *there*-insertion and locative inversion) and those of deep unaccusativity (such as auxiliary selection, causative alteration, resultative phrases, prenominal participles). In English surface unaccusativity is manifested only in *there*-insertion construction (*There* appeared a young lady) and the locative inversion construction (*Into the school* came a boy). The single argument of an intransitive verb in both of these constructions seems to be in the syntactic position of the object of a transitive verb (see Burzio 1986; Hoekstra and Mulder 1990, and Levin 1986). Among the unaccusative diagnostics postulated for English, the resultative construction qualifies as a diagnostic of deep unaccusativity, since the D-Structure status of the argument of an intransitive verb determines whether or not that verb will be accepted in this construction.

What should be emphasised here is the fact that the subclass of the unaccusative verbs: verbs of existence (*exist*, *remain*) are sensitive to surface unaccusativity (see Kimball 1973, Penhallurick 1984). However, their "sister" subclass: verbs of disappearance (*DIE*, *disappear*), as the verbs of change of state, are rarely compatible

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with the English surface unaccusative constructions, although they are still frequently assumed to be unaccusatives.

As already discussed, in English unaccusative verbs cannot be tested against the auxiliary selection diagnostic, or many others which are typical of German, Dutch or French. Nonetheless, English unaccusatives can form a causative alteration (except for the verbs of appearance and disappearance, including the verb *TO DIE*), resultative constructions (nonetheless inapplicable to the verb *TO DIE*), adjectival perfect participles, locative inversion and *there*-insertion. The class of intransitive verbs that has been examined represents a change of state verbs that belongs to disappearance verbs.

Therefore, since only three unaccusativity tests out of the six mentioned above seem to work for the verb *TO DIE*, it might be problematic to treat it as a member of the unaccusative class. Additionally, the instances provided to illustrate the three diagnostics valid for the verb *TO DIE* rarely occur in the available corpora, and consequently they should rather be viewed as exceptions, which would cast serious doubt on the unaccusative status of the verb *TO DIE*. This would lead us to the conclusion that the English verb *TO DIE*, commonly recognised as unaccusative, should be regarded as a real example of Unaccusative Mismatch (Levin 1986), since it satisfies only some, but not all the unaccusative diagnostics (seeGrimshaw 1987, Zaenen 1993, Levin and Rappaport Hovav 1995).

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