The German Sentential Proform *es* in All-Focus Sentences

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1 Introduction

In German, there exist inner-clausal proforms or correlates which are located in a matrix clause and relate to an embedded clause in a particular way, as shown in (1). These correlates are either realized as *es* (alt. *das*), when located in the position of the direct object or the subject, or as a ProPP, respectively, when situated in an adjunct position. A ProPP is a compositional pronoun consisting of the proform *da* and a preposition – e.g. *darüber* 'that-about' and *damit* 'that-with' (for more details see Schwabe 2011).[1]

(1) a. Frank hat es/das bedauert, [dass Maria krank ist].
         Frank has it/that regretted that Maria ill is
         'Frank felt sorry that Maria is ill.'

     b. Frank hat sich darüber gefreut, [dass Maria wieder gesund ist].
         Frank has REFL that-about pleased that Maria again healthy is
         'Frank is happy (about the fact) that Maria is healthy again.'

     c. Frank bedauert es, [wenn Maria krank ist].
         Frank regrets it if Maria ill is
         'Frank feels sorry if Maria is ill.'

In this paper, I will investigate the relationship between object *es*-correlates, the matrix predicates they co-occur with and the information structure of the overall sentence.

It has been observed by various authors (e.g. Sudhoff 2003, Axel 2009, Frey 2011, Trompelt et al. 2011) that only certain matrix predicates may license *es*-correlates in all-focus sentences, as shown in (2) vs. (3).[2]

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[1] The *wenn*-clause in (1c) is a conditional clause which expresses non-canonically the propositional complement of the matrix predicate – see F.-Hansen (1980), Zifonun et al (1997:2287f.), Pasch et al. (2003:383, 387), Schwabe (2011).

[2] The focus theory applied throughout this paper is Schwarzschild's (1999).

(2) Q: Was gibt es Neues?
      what gives it new
      'What's new?'

    A: [F Frank bedauert (es) [F dass Maria KRANK ist]].
       Frank regrets (it) that Maria ill is

(3) Q: Was gibt es Neues?

    A: [F Frank behauptet (*es) [F dass Maria KRANK ist]].
       Frank claims it that Maria ill is

Based on this observation, the above-mentioned authors draw the conclusion that there must be two types of object *es*, i.e. a place-holder and an anaphoric proform. This paper will show that such a dichotomy is unwarranted and that there exists only one *es*. It refers to a given statement, which is an abstract object and relates to the associated clause. It will be demonstrated that it is the semantic properties of the matrix predicate that determine the option of an *es*-insertion in all-focus sentences. These properties are related to the logical properties of statements which are embedded within a valid matrix clause, i.e. a matrix clause which is true.

2 ~~Towards a~~ Uniform Analysis of Object *es*-Correlates

2.1 Data

An object *es*-correlate occupies the slot of the internal argument of the matrix predicate, as e.g. with verbs such as *bedauern dass* 'regret', *behaupten dass* 'claim', and *versprechen dass* 'promise'. It may also occupy the subject position of a verb-selected Small Clause (4).[3]

(4)   Maria findet (es) gut, dass Peter kommt.
      Maria finds (it) good that Peter comes
      'Maria thinks it is a good idea that Peter will come.'

Being a weak proform, *es* cannot be topicalized and simultaneously serve as the head of the adjoined associated clause, whereas its strong counterpart *das* can (5a, c). This also applies to ProPPs where the *das* is part of a complex proform – cf. (1b) and (5b, d).

(5)   a.   Das/*es hofft Maria, dass Frank kommt.
        this/it hopes Maria that Frank comes
        'This is what Maria hopes: Frank will come.'

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[3] The notation *verb dass* indicates that the predicate in question embeds a declarative complement clause. *Verb ob*, on the other hand, indicates that the verb embeds an *ob*-interrogative.

b. Darüber hat sich Frank gefreut, dass Maria kommt.
  ProPP   has REFL Frank pleased that Maria comes
  'This is what made Frank happy: Maria will come.

c. Frank hat [das/*es, dass Maria kommt] gehofft.
  Frank has this   that Maria comes   hoped
  'Frank hoped that Maria would come.'

d. Frank hat sich [darüber, dass Max nicht kommt], aufgeregt.
  Frank has REFL ProPP   that Max not   comes   upset
  'Frank got upset out about the fact that Max did not come.'

The associated clause can be declarative (1a), a conditional clause (1c), an infinitive (6), or a polar or constituent interrogative (7). Even a verb second clause can serve as the associated clause (8); the latter construction type is rather rare, but does exist, contrary to the prevalent opinion (cf. Schwabe 2011).

(6)   Frank hat es Maria erlaubt, nach Paris zu fahren.
    Frank has it Maria allowed to   Paris to drive
    'Frank allowed Maria to go to Paris.'

(7) a. Frank kann es herausfinden, ob   Max nach Paris fährt.
    Frank can   it find-out   whether Max to   Paris drives
    'Frank can find out if Max is going to Paris.'

    b. Frank hat es Maria gesagt, warum er nach Paris fährt.
    Frank has it Maria told   why   he to   Paris drives
    'Frank told Maria why he is going to Paris.'

(8)   Frank hat es angekündigt: Morgen   wird Maria nach Paris fahren.
    Frank has it announced: tomorrow will Maria to   Paris go
    'Frank announced the following: Tomorrow Maria will go to Paris.'

Figures 1 and 2 below illustrate the distribution of the embedded clauses types (for further details see Schwabe 2011). These figures are the result from a search of the ZAS data base, which contains about 1700-proposition embedding predicates.

Figure 1 shows that there are just as many predicates that display an *es*-correlate as there a predicates that do not. The reason why there are relatively many predicates for which *es* in the matrix clause could not be attested may be found in the source genre: Such correlates are more frequently used colloquially, but the sentences exemplifying the embedding behavior of the matrix predicates are mainly taken from newspaper corpora.

Figure 2 shows that the number of *verb dass* predicates that license non-anaphoric *es* hardly exceeds the number of the predicates that exclusively license anaphoric *es*.
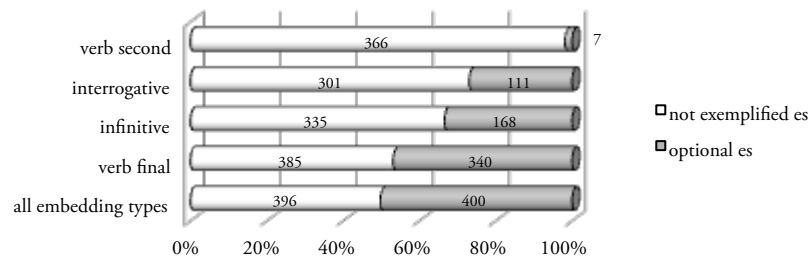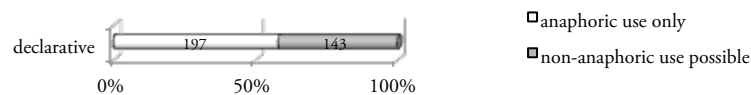
Figure 1: Object-*es*

Figure 2: (Non-)anaphoric-*es*

Examples for predicates that exclusively license anaphoric *es* are *behaupten dass* 'claim', *versprechen dass* 'promise', *vorschlagen dass* 'propose', *befürchten dass* fear', *beweisen dass* 'prove' *feststellen dass* 'find out', and *bedenken dass* 'consider' (see also Sudhoff's 2003:135 list of predicates). This class, which is nearly identical with Sudhoff's "claim-class", is quite heterogeneous. Some, but not all, of its predicates allow *wh*-movement and embedded root declaratives provided that there is no *es* in the matrix clause, (e.g. *behaupten dass* 'claim' vs. *beweisen dass* 'prove' and *feststellen dass* 'find out'). Predicates like *versprechen dass* 'promise' allow the embedding of root declaratives as well as *wh*-movement, regardless of the existence of an *es* in the matrix clause. A predicate like *feststellen dass* construes the reducible *ob*-form (9a) and the exhaustive *wh*-form (9b) whereas *bedenken dass* 'consider' licenses the internal *ob*-form (9c) and the non-exhaustive *wh*-form (9d). Predicates like *versprechen dass* 'promise', *beweisen dass* 'prove', and *behaupten dass* 'claim', on the other hand, ban interrogative embedding of any kind.

(9)   a.   *Reducible ob-form:*
          A verb + *ob* σ $\Leftrightarrow$ (A verb + *dass* σ $\lor$ A verb + *dass* $\neg\sigma$) en that
          there is a *dass*-form

      b.   *Exhaustive wh-Form:*
          wh_γ (A, verb, σ_γ) $\Leftrightarrow$ $\forall(x)$ [A verb + *dass* $\sigma(x)$ $\lor$ A verb + *dass* $\neg\sigma(x)$]

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c. *Internal ob-Form:*
A verb (*es*) *ob* σ ⇔ A verb (*es*) ($\sigma \vee \neg\sigma$)

d. *Non-exhaustive wh-form:*
wh_γ (A, *es*, verb, σ_γ) ⇔ A verb *es* *ob/dass* μ, whereby μ is a contextually given answer to the question wh_γ $\sigma(\gamma)$

Interestingly enough, *bedenken* 'consider' can license non-anaphoric *es* if it construes the internal *ob*-form – cf. (10b,c).

(10) Q: Was gibt es Neues?
    What happened?

a. [F Max bedenkt (es) [F ob   Marie ein AUTO gekauft hat]].
   Max considers (it)   whether Marie a   car   bought has

b. [F Max bedenkt (*es) [F dass Marie ein AUTO gekauft hat]].
   Max considers (*it)   that Marie a   car   bought has

c. [F Max stellt   (*es) fest [F dass/ob   Marie ein AUTO
   Max finds/figures (*it) out   that/whether Marie a   car
   gekauft hat]].
   bought has

The predicate class comprised of verbs licensing both anaphoric and non-anaphoric *es*-correlates (Sudhoff's "regret-class") contains amongst others *nachweisen* 'prove', *bedauern* 'regret', *vermeiden* 'avoid', *vorziehen* 'prefer', and *ignorieren* 'ignore'. In addition to their licensing of the non-anaphoric *es*, they equally prohibit embedded root declaratives. Nevertheless, this class is heterogeneous, too. For instance, the predicates *bedauern*, *vorziehen* and *ignorieren* allow for an associate in the form of a *wenn*-clause (e.g. *Frank ignoriert es, wenn Max kommt* 'Frank ignores it if Max comes'), whereas *arrangieren* 'arrange' and *vermeiden* 'avoid' do not. Unlike *nachweisen* 'prove', *vermeiden* 'avoid', as well as *vorziehen* 'prefer', predicates such as *bedauern* 'regret', *bedenken* 'consider' and *ignorieren* 'ignore' license a non-exhaustive *wh*-form [e.g. *Frank bedauert (es), wie traurig Maria ist* 'Frank regrets (it) how sad Maria is']. Verbs like *ignorieren* additionally allow for the embedding of polar interrogatives. On the other hand, *bedauern* 'regret', *vermeiden* 'avoid' and *vorziehen* 'prefer' license *wh*-movement if *es* is present in the matrix. Notice that *ignorieren* 'ignore' and *feststellen* 'find out' both allow the reducible *ob*-form (see (10c) and (11b)), but only *ignorieren* 'ignore' allows the *es* in the F-marked matrix clause of its *dass*-form – cf. (11a). Table 1 summarizes the data discussed thus far.

(11) Q: Was gibt es Neues?
    What happened?

a.   [F Max ignoriert (es) [F dass Marie ein AUTO gekauft hat]].
      Max ignores (*it)   that Marie a car   bought has

b.   [F Max ignoriert (*es) [F ob Marie ein AUTO gekauft hat]].
      Max ignores (*it)   whether Marie a car   bought has

| | | | es | declarative *dass* | | | interrogative | | | | | | *wenn* |
| | | | | | | | *ob* | | | *wh* | | | |
				Foc	wh-m	V2	Foc	(9a)	(9c)	Foc	(9b)	(9d)	
claim-class	i	*behaupten*	+	O	O	O	O	O	O	O	O	O	O
			-	/	I	I	/	O	O	/	O	O	O
	ii	*versprechen*	+	O	I	O	O	O	O	O	O	O	O
			-	/	I	I	/	O	O	/	O	O	O
	iii	*beweisen*	+	O	O	O	O	O	O	O	O	O	O
			-	/	O	O	/	O	O	/	O	O	O
	iv	*feststellen*	+	O	O	O	O	I	O	O	O	I	I
			-	/	O	O	/	I	O	/	I	O	O
	v	*bedenken*	+	O	O	O	I	O	I	I	O	I	I
			-	/	O	O	/	O	I	/	O	I	O
regret-class	vi	*nachweisen*	+	I	O	O	O	O	O	O	O	O	O
			-	/	O	O	/	O	O	O	O	O	O
	vii	*bedauern*	+	I	I	O	O	O	O	I	O	I	I
			-	/	O	O	/	O	O	/	O	I	I
	viii	*vermeiden*	+	I	I	O	O	O	O	O	O	O	O
			-	/	O	O	/	O	O	O	O	O	O
	ix	*vorziehen*	+	I	I	O	O	O	O	O	O	O	I
			-	/	O	O	/	O	O	O	O	O	I
	x	*ignorieren*	+	I	O	O	O	I	I	O	O	I	I
			-	/	O	O	/	I	I	O	O	I	I

Table 1: Object-*es*-licensing predicates

In conclusion: Disregarding the (lacking) option of realizing object es in a focus domain, there is no independent empirical support that could corroborate the existence of two distinct *es*-types. Moreover, Sudhoff's homonymy approach does not account for the facts that (i) *bedenken dass* 'consider' prohibits *es* in F-marked matrix clauses, while *bedenken ob* licenses it there, and that (ii) *ignorieren dass* allows for *es* in F-marked matrix clauses, while *ignorieren ob* does not.

In section 3 below, we will see how the semantic properties of the matrix predicates determine whether *es* can be used anaphorically or not. To show this, let us first turn to Sudhoff's (2003) syntactic account, which distinguishes between a placeholder *es* and an anaphoric proform *es*, and contrast it with Schwabe's (2011)

proposal.[4]

3   Sudhoff's (2003) and Schwabe's (2011) Syntactic Analyses

Sudhoff argues correctly that only certain predicates license *es* in an F-marked matrix clause. But he fails to verify his claim that the "placeholder" *es* neither has reference nor bears a theta-role. Equally unexplained is his assertion that the associated clause of anaphoric *es* is prosodically less integrated into the overall sentence than the one of his purported "placeholder" *es*. Regarding the syntactic status of placeholder *es*, Sudhoff analyzes it as a determiner head that takes a CP-complement, as demonstrated in ~~example~~ (12a), which is a partial representation of *Frank hat es bedauert, dass Maria krank ist* (1a). A similar approach is given in Müller (1995) as shown in (12b). Unlike Sudhoff and Müller, Sternefeld (2011) and Frey (2011) as well as Zimmermann (2011) assume that *es* is a DP or NP, respectively to which the associated clause is adjoined (12c, d). Whereas Sudhoff, Zimmermann and Frey distinguish at least two different *es*-types, Müller and Sternefeld do not argue for such a distinction.

(12) a. $[_{CP} [_{V'} [_{DP} [_{D^0} \; es] \; CP] \; V^0]]$ Sudhoff (2003)
      b.   ~~$[_{CP} [_{V'} [_{DP} [_{D^0} \; es] \; CP] \; V^0]]$~~   ~~Sudhoff (2003)~~
      c. $[_{CP} [_{V'} [_{DP} [_{DP} \; es] \; CP] \; V^0]]$ Zimmermann (2011)
      d. $[_{CP} [_{V'} [_{DP} \; es \; CP] \; V^0]]$ Sternefeld (2006), Frey (2011)

To avoid the ungrammatical constellation in which a weak proform heads a major constituent, the above-mentioned authors stipulate the obligatory extraposition of the CP. Sudhoff and Sternefeld consider an additional possibility, i.e. the deletion of the *es* (13a). Müller, Zimmermann and Frey, on the other hand, do not argue for a deletion, but rather assume that a complement clause without an *es*-correlate originates as a bare CP (13b):

(13) a. $[_{CP matrix} \dots [_{V'} [_{DP} [_{D^0} \; \varnothing] \; CP] \; V^0] \dots]$ Sudhoff, Sternefeld
      b. $[_{CP matrix} \dots [_{V'} \; CP \; V^0] \dots]$ Müller, Frey, Zimmermann

A possible advantage of these analyzes (Sudhoff's and Müller's DP with an empty head or Müller's, Frey's and Zimmermann's bare CP) seems to be that the complex

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[4]Frey (2011) discusses a possible third *es*-type, which relates to the external argument of the matrix predicate or a predicative complement (e.g. *Ihn amüsiert es, wie Maria singt* 'He enjoys Maria's singing'.

DP/bare CP can be topicalized without violating the ECP (but for a critical view of Sudhoff's and Müller's accounts see Schwabe 2011). A potential ECP-violation would occur if the CP left the DP- or NP-islands in (12a-d) and (13a) in order to move to the left periphery. Such an ECP-violation does not result when the CP leaves the DP/NP in (12a-d) and (13a) and moves to the right, i.e. when extraposed.

As for anaphoric *es*, Sudhoff, Zimmermann and Frey suggest that it has reference, bears a theta role and is located in an argument position, as indicated in (14). Its associate clause is argued to be right-dislocated (see Sudhoff 2003:101). The movement of the associated clause to the left would result in an ECP violation.

(14) $[_{CPmatrix} [_{CPmatrix} \dots [_{V'} es\ V^0]]\ CP]$

However, the assumption of a right-dislocated associated CP, is not compelling if one considers constructions like (15) (for additional examples see Schwabe 2011), which reveal that the associated clause is integrated prosodically and hence cannot be in a right-dislocated position:

(15)   a.   Es war in Bonn, als   Frank es gehört hat, dass das Institut
              it was in Bonn when Frank it heard has that the institute
              schließt.
              closes
              'It was in Bonn that Frank heard it that the institute will close.'

        b.   Nur ein Optimist wird   es glauben, dass Griechenland seine
              only an optimist might it believe   that Greece   its
              Schulden tilgt.
              debts   deletes
              'Only an optimist might believe it that Greece will amortize its debts.'

In Schwabe (2011), I argued instead that an *es*-correlate must be a uniform sentential proform which refers to a given statement and is located in an argument position, either in an external argument position as in (16), or in an internal argument position as in (17), or in a small clause as in (18). The associated clause is base-generated as VP- or vP adjunct in extraposition.

(16)   a.   Vielleicht hat es ihn interessiert, dass Peter kommt.
              maybe   has it him interested   that Peter comes
              'Maybe it was of interest to him that Peter will come.'

        b. $[_{CPmatrix}$ vielleicht $\dots es_i \dots \{_{VP} [_{VP} t_i [_{V'} [_{vP} [_{v'}$ ihn interessiert]]]] $CP_{dass}\}]$

(17)   a.   Frank hat es bedauert/behauptet, [dass Maria krank ist].
              Frank has it regretted/claimed   that Maria ill   is

'Frank has regretted/claimed it that Maria is ill.'

b. $[_{CPmatrix} \ldots es_i \ldots [_{VP} \ldots \{_{vP} [_{vP} [_{v'} t_i \text{ bedauert/behauptet}]] CP_{dass}\}]]$

(18) a.   Maria findet (es) gut,   dass Peter kommt.
               Maria finds   it   good that Peter comes

              'Maria thinks it is a good idea that Peter will come.'

b. $[_{CPmatrix} \ldots es_i \ldots [_{VP} \ldots \{_{vP} [_{vP} [_{v'} t_i [_{v^0} [_{AP} \text{ gut}] \text{ findet}]]] CP_{dass}\}]]$

According to Haider (1995: 262ff.), the associated clause is not directly licensed in this right ad-joined position. Thus, leftward movement/topicalization out of this position would lead to an ECP-violation. Topicalization, however, is possible if the complement clause is in the canonical argument position within the middle-field.

(19) a.   …weil Frank [dass Maria krank ist], bedauert hat.
               because Frank that   Maria ill   is   regretted has

              '…because Frank felt sorry that Maria is ill.'

b.   [Dass Maria krank ist]$_i$, hat Frank t$_i$ bedauert

If the matrix predicate allows for the realization of the propositional argument as a conditional clause, the latter appears in an adjunct position, either in the middle-field or in the post-field (20) and (21). Unlike the complement clauses in (16)-(18), a conditional clause may be topicalized, if *es* occupies the canonical propositional complement position – cf. (21a, c) ~~and F. Hansen (1980)~~.

(20) a.   Frank bedauert es, [wenn Maria krank ist].
               Frank regrets   it if   Maria ill   is

              'Frank feels sorry if Maria is ill.'

b. $[_{CPmatrix} \ldots es_i \ldots \{_{VP} [_{VP} \ldots [_{vP} [_{v'} t_i \text{ regret}]]] CP_{wenn}\}]$

(21) a.   weil Frank es [wenn Maria krank ist]bedauert

b. $[_{CPmatrix} \ldots es_i \ldots \{_{VP} CP_{wenn} [_{VP} \ldots [_{vP} [_{v'} t_i \text{ regret}]]]\}]$

c.   [Wenn Maria krank ist], bedauert es Frank.

It has been shown that there are no syntactic reasons to distinguish between two es-types. But we still owe an explanation as to why es can occur in the focus domain of regret-type predicates, but not in the focus domain of claim-type predicates.

4 Semantic Properties of Matrix Predicates and *es* in All-Focus Sentences

4.1 Consistency degrees

An *es*-correlate refers to a statement which is regarded as an abstract object (cf. Asher 1993). This object is denoted directly or indirectly by way of the associated clause. The statement is directly denoted if the associated clause is a declarative or a conditional clause. If the embedded clause is an interrogative and thus denoting a question, *es* refers to a statement that is ~~an~~ answer to this question. If there is no correlate in the matrix clause of an embedded declarative, a conditional or interrogative, the statement can only be related to by way of the embedded clause. Specific properties of the matrix predicate determine the logical status which a valid proposition with or without a correlate imposes upon its embedded clause. These properties – Schwabe & Fittler (2011; henceforth S&F) label them "consistency properties" – predict, amongst others, whether the embedded clause can be realized as a declarative, an interrogative or a conditional, whether *wh*-movement and verb-second embedding is licensed, and whether the *es*-correlate can appear in an F-marked matrix clause.

S&F's theoretical framework theory is based on semantic models – constellations ($\aleph$) –, each consisting of a first order structure and an additional interpretation of the matrix clauses. The structure models the respective embedded clauses in a first order predicate logic language (L) and determines the truth values of the set of matrix clause such as α *verb dass/ob* σ. As for the logical status of the embedded clauses, S&F distinguish between the following options:

(i) *contradictory* σ, i.e. a σ that is false in every $\aleph$;

(ii) *contingently false* σ, i.e. a σ that it is false in at least one, but not in all $\aleph$s;

(iii) *contingently true* σ, i.e. a σ that is true in at least one $\aleph$, but not in all $\aleph$s;

(iv) *absolutely propositional tautological* σ, i.e. σ is a propositionally logical tautology where the propositional variables are replaced by contingent statements (e.g. *Maria is coming or Maria is not coming*);

(v) *propositional tautological* σ, i.e. a σ that is a propositionally logical tautology where the propositional variables are specified by arbitrary statements from L – cf. *There is no Cretan who precisely shaves those Cretans who do not shave themselves or there is a Cretan who precisely shaves those Cretans who do not shave themselves*; and

(vi)   *arbitrary tautologies neither belonging to (iv) nor to (v)* – cf. *There is no Cretan who precisely shaves those Cretans who do not shave themselves.*

S&F formulate absolute consistency levels by employing sets of statements which are characterized by the properties just introduced, as shown in Table 2.

$c_\aleph$	$f_\aleph$	$v_\aleph$	$t'_\aleph$	$t_\aleph$
Set of contradictions	Set of σs false in $\aleph$, except contradictions	Set of σs valid in $\aleph$, except propositional tautologies	Set of absolutely propositional tautologies	Set of arbitrarily propositional tautologies
in L[$\aleph$]				

Table 2: ~~Object *es* licensing predicates~~

In addition to absolute consistency levels, S&F define relative consistency levels, which are relevant for predicates that license ProPPs. They display the important characteristic that they are related to the knowledge of the matrix subject. Take, e.g., the relative consistency levels $K_{\alpha\aleph}$ and $I_{\alpha\aleph}$, respectively. $K_{\alpha\aleph}$ consists of all σs contingent with what the subject α in $\aleph$ knows while $I_{\alpha\aleph}$ consists of all σs logically entailed by what the subject α knows. The characteristic consistency properties of a large group of predicates are what ~~Schwabe & Fittler~~ call "consistency degrees". A consistency degree κG(pred) is the minimal family of consistency levels the union of which contains, for every $\aleph$ and α in $\aleph$, the range of validity val(pred; α, $\aleph$) as a subset, provided that the union does not cover all statements of the first order languages L[$\aleph$] of embedded formulas with parameters from $\aleph$ that do not contain free variables. The range of validity val(pred; α, $\aleph$) is the set of statements σ, where α pred σ is true in $\aleph$. Thus, *bedauern dass* 'regret' has the consistency degree {f, v}, *behaupten dass* 'claim' and *versprechen dass* 'promise' have {c, f, v} and *bedenken dass* 'consider' has {f, v, t}. Verbs like *glauben* 'believe" and *hoffen* 'hope' have combined consistency degrees {c, f, K, I} and {c, f, K} respectively, consisting of absolute and relative consistency levels.

Verbs like *feststellen dass* 'notice' and *wissen dass* 'know' differ from the above verbs in that they are SI-objective. According to ~~Schwabe & Fittler~~ verb is SI-objective if there is at least one constellation $\aleph$ in which verb is semi-implicative [α verb dass $\sigma \Rightarrow \sigma$] and for every embeddable true statement σ, there is an individual such that α verb dass σ. Their *ob*-pendants, i.e. *feststellen ob* 'notice whether' or *wissen ob* 'know whether', are NI-objective. A verb is NI-objective if there is at least one constellation $\aleph$ in which the verb is negation-invariant [α verb *dass/ob* $\sigma \Leftrightarrow \alpha$ verb *dass/ob* $\neg\sigma$] and for every embeddable statement σ, there is an individual such

that α verb *dass/ob* σ.

As S&F show, a correlate typically modifies the consistency degree. For instance, *es* turns the consistency degree {f, v} of *bedauern dass* 'regret' into {v} and the consistency degree {c, f, K, I} of *glauben dass* into {c, f}. *Bedauern dass* 'regret' and *feststellen dass* 'find out' even become factive [α (not) pred *dass* $\sigma \Rightarrow \sigma$] and *vorziehen* 'prefer' becomes anti-factive [α (not) pred *dass* $\sigma \Rightarrow \neg\sigma$]. Most SI-objective predicates become factive when used with *es* (e.g. *es wissen dass* 'know' and *es feststellen dass* 'find out') The meaning of NI-objective predicates such as *wissen ob*, which, unlike *zweifeln ob* 'doubt whether', have an SI-objective pendant is not changed by the presence of *es*. A formerly objective verb becomes objectively-based when used with a correlate.

In Table 3 a survey of the consistency properties of the pertinent predicates is given.

		dass		*ob*	
		-*es*	+*es*	-*es*	+*es*
i.	*behaupten* 'claim'	{c, f, v}	{c, f}	–	–
ii.	*glauben* 'believe'	{c, f , K, I}	{c, f}	–	–
	versprechen 'promise'	{c, f, v}	{f, v}	–	–
iii.	*beweisen* 'prove'	{v, t}	{v, t}	–	–
iv.	*feststellen* 'find out'	SI-objective	SI-object.-based & factive	NI-objective (9a)	NI-objective-based (9a)
v.	*bedenken* 'consider'	{f, v}	{v} & factive	{t}, (9c)	{t'}, (9c)
vi.	*nachweisen* 'verify'	{v}	{v} [=implicative]	–	–
vii.	*bedauern* 'regret'	{f, v}	{v} & factive	–	–
viii.	*vermeiden* 'avoid'	{f}	{f} [anti-implicative]	–	–
ix.	*vorziehen* 'prefer'	{f}	{f} & anti-factive	–	–
x.	*ignorieren* 'ignore'	{f, v}	{v} & factive	{t},(9a)	{t'}, (9a)

Table 3: Selected consistency properties

5 Semantic Properties of Predicates with an *es*-Correlate in All-Focus Sentences

Returning to the question what the *es*-~~licensing~~ predicates v to x in tables 1 and 2 have in common, one may notice that the consistency degrees of the non-objective predicates (i-iii and v-x) consist of a single consistency level: *es bedauern dass* 'regret', *es nachweisen dass* 'prove' and *es ignorieren dass* 'ignore', exhibit v, *es vermeiden*

dass 'avoid', *es vorziehen dass* 'prefer' exhibit {f}. Comparing these predicates to *es glauben dass* 'believe', *es versprechen dass* 'promise', and *es beweisen dass* 'prove', which do not license *es* in the F-marked matrix clause, it becomes evident that the latter's consistency degrees exhibit more than one consistency level. Notice, however, that *es bedenken dass* {v} 'consider' does not license *es* in an F-marked matrix clause, despite having only one consistency level in its consistency degree, but *es bedenken ob*, which exhibits {t'} and licenses the internal *ob*-form (9c), does. *Es ignorieren ob* 'ignore', which also exhibits {t'}, but licenses the reducible *ob*-form, prohibits *es* in the F-marked matrix clause, whereas *es ignorieren dass*, which exhibits {v}, does not. Notice further that ~~objectively-based predicates~~ do not allow *es* in the F-marked matrix clause either. Building on these observations, we are able to formulate a rule that predicts the grammaticality of sentences with *es* in an F-marked matrix clause as follows:

(22)   An *es*-correlate is licensed in an F-marked matrix clause with verb *dass/ob* iff the latter are non-objective and

    a.   in the case of verb *dass*

       i.   the consistency degree of *es* verb *dass* only contains one consistency level provided *es* verb *dass* does not have an *ob*-pendant, and

       ii.   provided there is an *ob*-pendant for *es* verb *dass*, the *ob*-form is the reducible *ob*-form and

    b.   in the case of verb *ob*, it is not in the reducible *ob*-form (9a).

Note that there are only a few predicates fulfilling (22b), e.g. *es erörtern ob* 'discuss' and *es bedenken ob* 'consider', which both do not construe the reducible *ob*-form. Predicates obeying (22ai) form four classes: (i) the class of semi-implicative but not factive predicates, e.g. *es nach-weisen dass* 'substantiate'; (ii) the class of factive predicates, e.g. *es bedauern dass* 'regret', *es ertragen dass* 'suffer' and *es genießen dass* 'enjoy'; (iii) the class of anti-implicative but not anti-factive verbs, e.g. *es riskieren dass* 'risk', *es ermöglichen dass* 'enable' and *es verursachen dass* 'cause'; (iv) the class of anti-factive predicates, e.g. *es erleichtern dass* 'relieve' and *es vorziehen dass* 'prefer'. They all do not have an *ob*-pendant and the consistency degree of their *es* verb *dass* pendant only contains one consistency level. Predicates fulfilling (22aii) like *es ignorieren dass* 'ignore' have a verb *ob*-pendant in the reducible *ob*-form.

One question remains: How can *es* in an F-marked matrix clause refer to a statement that is not given in an anaphoric utterance? As for the predicates *es* verb *dass*, the statement can be derived from the consistency degree of the predicate and the constellation ℵ in which the predicate is used. With regard to semi-implicative

and factive predicates, *es* relates to a fact that is self-evident, provided that the ~~predicate~~ is true in ℵ. The matrix and the associated clauses are F-marked because they are new. As to anti-implicative and anti-factive predicates, *es* ~~also~~ relates to a fact, provided that the ~~predicate~~ is true in ℵ. ~~But this fact is the complement of the statement which *es* refers to. Here again *es* need not be F-marked because it relates to a given entity.~~ As to *es* co-occuring with predicates <mark>verb</mark> *ob* in a non-reducible *ob*-form, it relates to the tautology $\sigma \lor \neg\sigma$, see (9c). Notice that the more informative reducible *ob*-form (9a), which does not make a distinction between σ and $\neg\sigma$, prevents *es* within its F-marked matrix clause.

6   Conclusion

In this paper, I argued that there exists only one *es*-category, namely the proform *es*. It either refers anaphorically to a statement given in the preceding discourse or it refers to a fact ~~which is self-evident~~. Whether *es* relates to a fact or antifact depends on the consistency degree of the matrix predicate ~~and the respective constellation~~. Thus, the hypothesis with two distinct *es*-correlates could be refuted by establishing and applying a purely phenomenological rule (22), which is based on the consistency degrees of the pertaining matrix predicates; resorting to any ad hoc classes of predicates is not necessary. A remaining problem is to explain why this rule holds.

The paper mainly focused on predicates which embed *dass*-clauses. Hence, questions regarding the relationship between *es* and embedded interrogatives have been put aside. The same holds for cross-linguistic consideration, as for instance the relationship between Hungarian *azt*, Swedish *det* and German *es* (for more details see Brandtler & Molnár 2011).

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