Syntactic force of consistency conditions for German matrix predicates

Kerstin Schwabe & Robert Fittler

ZAS Berlin & FU Berlin

schwabe@zas.gwz-berlin.de

RobertFittler@netscape.net

1 Introduction
1.1 Force of consistency conditions

- Consistency conditions determine
  - Clause type of the complement clause
    - declarative *glauben* 'believe'
    - Interrogative *wissen* 'know', *fragen* 'ask', *bedenken* 'consider'
  - Correlate type
    - *es*-correlate *es annehmen* 'assume' (1a)
    - *da*-correlate *darüber nachdenken* 'think about' (1b)
    - *es*- and *da*-correlate *es/daran glauben* 'believe it/in' (1c-c'')
    - no correlate *zischen* ' hiss' (1d)
  - Wenn-form

    Frank bedauert es, wenn Max kommt

    Frank regrets it if Max will come

1 Introduction
1.2 Clause types

- Declarative
  - ***dass*-form**

    F glaubt, dass M kommt. ‘F believes that M is coming‘
- Interrogative
  - ***ob*-form**

    F fragt, ob M kommt. ‘F asks wether M is coming‘

    F hört davon, ob M kommt ‘F hears about wether M is coming*’*

    *F hört, ob M kommt. ‘*F hears whether M is coming‘

    F bedenkt, ob M kommt. ‘F considers whether F is coming’
  - ***wh*-form**

    *F fragt, wer kommt. ‘*F asks who is coming’

    F weiß, wer kommt. ‘F knows who is coming’

    F bedenkt, wer kommt. ‘F considers who is coming’

    F bedauert, wer kommt. **‘** F regrets who is coming‘

1 Introduction
1.2 Clause types

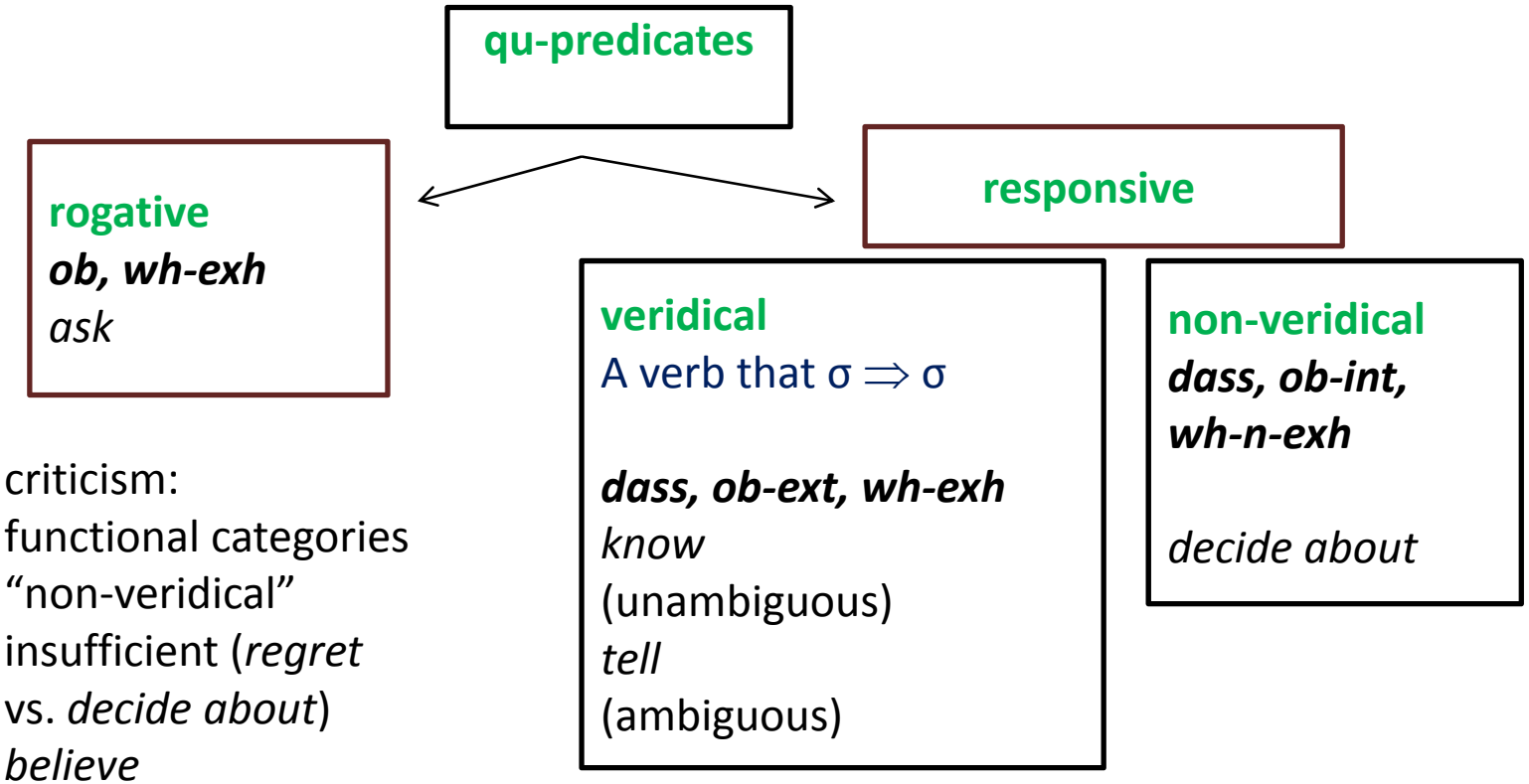
- ***external ob-form*** *wissen 'know'* (2b)
  A verb ob σ ⇔ (A verb dass σ ∨ A verb dass ¬σ)
- ***exhaustive wh-form*** *wissen 'know'* (2b)
  wh(A, verb, σ) ⇔ ∀x [A verb ob σ(x)]
- ***internal ob-form*** *bedenken 'consider'* (2b')
  A verb ob σ ⇔ A verb dass (σ ∨ ¬σ)
- ***non exhaustive wh-form*** *bedenken 'consider'* (2b')
  wh(A, [cor],verb, σ) ⇔ A verb [cor] ob μ,
  with μ being a contextually given proposition
- ***non exhaustive wh-form*** *bedauern 'regret'* (2d)
  wh(A, cor, verb, σ) ⇔ A verb cor dass μ,
  with μ being a contextually given proposition

1 Inroduction
1.3 Predicate types

i. *hören* (hear) ***dass, ob-ext, wh-exh***	**ii.** *fragen* (ask) ***ob, wh-exh***	**iii.** *glauben* (believe) ***dass***	**iv.** *bedauern* 'regret', ***dass, wh-n-exh***
factive, semi-factive, qu-extension (G&S 1982) fact (Ginzburg 1995)	qu-intension (G&S 1982) question (Ginzburg 1995)	non-factive proposition (Ginzburg 1995)	**v.** *zweifeln* 'doubt' ***dass, ob-ext*** **vi.** *bedenken* 'consider' ***dass, ob-int, wh-n-exh***

1 Inroduction
1.3 Predicate types

- Lahiri (2002), Spector & Egré (2007), Egré (2008):



2 Consistency conditions and degrees
2.1 Objective predicates

Consisistency conditions define particular semantic properties:

- ***semi-implicative***

  x verb dass σ ⇒ σ

  wissen dass 'know', *erreichen dass* 'manage', …
- ***negation-invariant***

  x verb dass/ob σ ⇔ x verb dass/ob ¬σ

  wissen ob, fragen ob 'ask' , *zweifeln dass/ob* 'doubt' [consistent with negation-invariant], *kontrollieren ob* 'check', *bedenken ob* 'consider', *darüber nachdenken ob* 'think about', …
- ***anti-semi-implicative***

  x verb dass σ ⇒ ¬ σ

  (*sich*) *irren* (*darin*) *dass* 'be wrong', *verhindern dass* 'prevent', …

2 Consistency conditions and degrees
2.1 Objective predicates

- Semi-implicativity is a necessary but not a sufficient condition for the external *ob*-form – cf.

  wissen dass/ob 'know' vs. *erreichen dass/*ob* 'manage'

- Negation-invariance is a necessary, but not a sufficient condition for the exhaustive *wh*-form – cf.

  Frank weiß, wer kommt

  wh(F, know, x come) $\Leftrightarrow \forall x$ [F knows ob σ(x)]

  Frank kontrolliert, wer kommt

  *wh(F, check, x come) $\Leftrightarrow \forall x$ [F knows ob σ(x)]

  wh(F, check, x come) $\Leftrightarrow$ F verb ob μ (= non-exhaust. wh-form)

2 Consistency conditions and degrees
2.1 Objective predicates

- ***Witness Existence Condition*** *(WEC)*

  $\forall\sigma\,[\exists x\,(x \text{ verb dass/ob } \sigma) \vee \exists x\,(x \text{ verb dass/ob } \neg\sigma)]$

  Verbs being consistent with *WEC* are *wissen dass/ob* 'know', *fragen ob* 'ask', *glauben dass* ‘believe’, *hoffen dass* ‘hope’, but not *bedauern* 'regret', *beweisen dass* 'prove' or *kontrollieren ob* 'check'.

2 Consistency conditions and degrees
2.1 Objective predicates

- ***Objective predicates:*** they are simultaneously consistent with WEC and either *semi-implicative* or *negation-invariant* or *anti-semi-implicative* (provided they do not display their possible correlates).
  - *wissen dass* 'know', *hören dass* 'hear', *sagen dass* 'tell' (consistent with WEC & semi-implicative)
    - *wissen dass* is inherently semi-implicative
    - *hören dass* and *sagen dass* are non-inherently semi-implicative
  - *wissen ob*, *hören ob*, *zweifeln dass/ob 'doubt'*

    (consistent with WEC & negation-invariant)
  - (*sich*) *irren dass* 'be wrong'

    (consistent with WEC & anti-semi-implicative)

2 Consistency conditions and degrees
2.1 Objective predicates

- ***External ob-form***

  A verb ob σ $\Leftrightarrow$ (A verb dass σ $\vee$ A verb dass $\neg$σ)

  - is licensed by all objective *dass*-predicates, except the anti-semi-implicative ones

    hören ob 'hear', *zweifeln ob* 'doubt', **sich irren ob* 'be wrong'

- ***Exhaustive wh-form***

  wh(A, verb, σ) $\Leftrightarrow$ $\forall$x [A verb ob σ(x)]

  - is licensed by all objective predicates, provided they do not contradict *wissen dass* 'know‘

    *wissen wh ‘know’, fragen wh ‘ask’, *zweifeln wh* 'doubt', **sich irren wh* 'be wrong'

2 Consistency conditions and degrees
2.1 Non-objective predicates

Non-objective predicates are characterized by ***absolute***, ***relative***, and ***combined*** consistency conditions

- ***Absolute consistency conditions***
  correlate the possible truth values of the matrix verb and the possible truth values or consistency properties of the embedded proposition σ
  - semi-implicative
    erreichen dass ‘ manage‘
  - negation-invariant
    kontrollieren ob ‘ check‘
  - anti-semi-implicative
    verhindern dass ‘ prevent‘

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***absolutely consistent***
  x verb dass $\sigma \Rightarrow \sigma$ is consistent
  bedenken dass ‘consider’*, erraten* ‘*guess‘,* …

- ***absolutely contingent***
  x verb dass $\sigma \Rightarrow \sigma$ is contingent
  bedauern dass ‘*regret‘, schätzen dass* ‘appreciate', …

- ***absolutely intautological***
  x verb dass $\sigma \Rightarrow \sigma$ is not tautological
  bezweifeln dass ‘doubt’, *vermuten dass* ‘imagine’, …

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***absolutely tautological***
  x verb dass $\sigma \Rightarrow \sigma$ is a tautological formula propositionally built upon contingent constituents $\tau, \eta, \ldots$
  bedenken ob which is the restriction of *bedenken dass* to the tautologies of the form $\tau \vee \neg\tau$, where τ is absolutely contingent

- ***improperly semi-implicative***
  semi-implicative & (*x verb dass* $\sigma \Rightarrow \sigma$ is not tautological)
  es bedauern dass, es abstreiten dass 'deny', …

- **[*improperly*] *factive***
  x verb dass $\sigma \Rightarrow \sigma$ [& (*x verb dass* $\sigma \Rightarrow \sigma$ is not tautological)]&
  $\neg$ (*x verb dass* σ) $\Rightarrow \sigma$ [& (*x verb dass* $\sigma \rightarrow \sigma$ is not tautological]
  es bedauern, but not *es beweisen* or *es erreichen* 'succeed'

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***Relative consistency conditions***

  correlate the possible truth values of the matrix verb with the consistency properties of the embedded σ as well as with the set [KN(x)] of statements the matrix-subject *x* knows.

  Verbs fulfilling a relative consistency condition hold true only for embedded statements σ based on V(x), i.e. σ is formulated by means of individual constants, predicate constants and parameters contained in the vocabulary V(x) of the subject's knowledge KN(x).

- ***relatively cognitent***

  x verb dass σ $\Rightarrow$ [*σ* follows from KN(x)] & *σ* is based on V(x)

  sich darauf konzentrieren dass 'concentrate upon', *darüber nachdenken dass* 'think about'…

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***relatively incognitent***
  x verb dass σ $\Rightarrow$ [*σ* does not follow from KN(x)] & *σ* based on V(x)
  darauf hoffen dass 'hope for'

- ***relatively consistent***
  x verb dassσ $\Rightarrow$ [*σ* is consistent with KN(x)] & *σ* based on V(x)
  sich freuen dass 'be glad', *darüber diskutieren dass* 'discuss', …

- ***relatively contingent***
  x verb dass σ $\Rightarrow$ [*σ* is contingent with KN(x)] & *σ* based on V(x)
  sich darauf freuen dass 'look forward', *sich bemühen dass* 'make an effort', …

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***relatively tautological***

  x verb dass $\sigma \Rightarrow$ [σ is a propositional tautology built upon constituents τ, η, … being contingent with KN(x)] & σ based on V(x)

  darüber nachdenken ob which is the restriction of *nachdenken darüber dass* to the tautologies of the form $\tau \vee \neg\tau$, where the τ is contingent with the subject's knowledge and based on V(x).

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***improperly relatively cognitent/consistent***

  verb is relatively cognitent/consistent & $\forall\sigma\forall x$ [*x verb dass σ* does not hold true for any propositional tautology *σ* built upon constituents *τ, η,…* being contingent with KN(x) & *σ* based on V(x)]

  sich darüber freuen dass ‘be glad about’, *daran denken dass* 'think of', *darüber klagen dass* ‘complain’, ...

2 Consistency conditions and degrees
2.1 Non-objective predicates

- ***Combined consistency conditions***
  have a form α # β, where α is an absolute and β is a relative consistency condition and neither $\alpha \Rightarrow \beta$ nor $\beta \Rightarrow \alpha$
- ***absolutely contingent # relatively consistent***

  diskutieren dass '*discuss'*, …

  x verb dass σ $\Rightarrow$ (σ is contingent $\vee$ [σ is consistent with KN(x) & σ is based on V(x)]) (deviation from handout)
- ***absolutely intautological # improperly relatively consistent***

  hoffen dass 'hope', … (deviation from handout)

2 Consistency conditions and degrees
2.1 Non-objective predicates

- The union of the three classes of absolute, relative and combined consistency conditions are partially ordered by logical implication. The strongest consistency condition satisfied by a matrix predicate we call its ***consistency degree***.

- Still to do:
  - correlates
  - internal ob-form
  - non-exhaustive wh-form

3 Correlate types
3.1 *es*-correlates

- ***non-objective predicates***
  - have an *es*-correlate if they have an absolute or combined consistency degree or are without any consistency degree

    es bedauern 'regret', *es glauben* 'believe, *es zischen* 'hiss, …

  - Impact of the correlate, examples:
    - *Frank bedauert/bedenkt **(es)**, dass Max kommt*.

      F regrets/considers it that M is coming

      absolutely contingent/consistent ►semi-implicative, factive
    - *F hofft **(es),** dass Maria kommt.*

      F hopes it that Maria is coming

      absolutely intautological # relatively consistent ► absolutely intautological (deviation from handout)

3 Correlate types
3.1 *es*-correlates

- ***objective predicates***

  – have an *es*-cor if they (non-) inherently semi-implicative
  es hören ‘hear’, *es wissen* ‘know’, *es merken* 'notice‘ , **es sich irren* ‘be mistaken’, **es fragen* ‘ask’, …

  – Impact of the *es*-correlate:

  - *Frank hört **(es)**, dass Pauline kommt.*
    Frank hears (it) that Pauline is coming
    (non-)inherently semi-implicative and absolutely consistent ► factive

3 Correlate types
3.2 *da*-correlates

- ***non-objective predicates***
  - have a *da*-correlate if they have a relative or combined consistency degree
  - Impact of the *da*-correlate, examples:
  - *F freut sich **(darüber)**, dass M kommt*.

    F is glad about that …

    improperly relatively consistent ► improp. relatively cognitent,

    cognitive: $(\neg)[x\ pred\ dass\ \sigma] \Leftrightarrow [\mathrm{KN}\ (x) \Rightarrow \sigma]$
  - *F freut sich **(darauf)**, dass M kommt*

    F is looking forward that …

    improperly relatively consistent ► relatively contingent

3 Correlate types
3.2 *da*-correlates

- ***objective predicates***
  - have a *da*-correlate if they are either absolutely consistent and (non-) inherently semi-implicative *or* anti-semi-implicative *or* (non-) inherently negation-invariant and their range of validity is not *deductively closed*.
    - deductively closed:
      the verb's range of validity ρ(x) = {τ| ℵ⊨ *x verb dass* τ}
      contains at least all its own logical consequences which are not tautologies: *merken ‘* notice*‘, sehen ‘see‘ …*
    - *deductively open: wissen dass ‘know’*, *erfahren dass ‘find out’*, *hören dass* 'hear‘, and *sich irren dass ’*be mistaken’, *fragen ob* ‘ask’, and *zweifeln dass/ob* ‘doubt’

3 Correlate types
3.2 *da*-correlates

– Impact of the *da*-correlate on objective predicates, examples:

- *F hört **(davon)**, dass M kommt*
  F hears about that M is coming
  (non-)inherently semi-implicative ► deductively closed

Preliminary summary

- Objective and non-objective predicates
  - objective predicates except the anti-semi-implicative ones license the ***external ob-form,*** they license the ***exhaustive wh-form*** if they are consistent with *wissen dass* 'know'
- Consistency degrees of non-objective predicates and the impact of correlates
- Open issues:
  - internal ob-form
  - non-exhaustive wh-forms

4 Internal ob-form and non-exhaustive wh-form
4.1 Internal *ob*-form: non-objective predicates

- ***Internal ob-form***

  A *verb ob* σ ⇔ A *verb dass* (σ ∨ ¬σ)

- ***non-objective dass-predicates*** have the internal ob-form
  - if they have the consistency degree ***absolutely consistent***

    bedenken ob 'consider' , **bedauern ob* 'regret' [absolutely contingent], **bestreiten ob* [absolutely intautological]
  - if they have the consistency degree ***relatively cognitent*** or ***consistent***

    *sich dafür interessieren ob, darüber spekulieren ob, *sich darüber/darauf freuen ob* [improperly relatively cognitent/ relatively contingent] **darauf bestehen ob* 'insist' [relatively contingent]

4 Internal ob-form and non-exhaustive wh-form
4.1 Internal *ob*-form: non-objective predicates

- if β in the combined consistency degree α # β does not exclude tautologies

  (darüber) diskutieren ob

  [absolute contingent # relatively consistent],

  *(darauf) hoffen *ob*

  [absolutely intautological # improperly relatively consistent]

4 Internal ob-form and non-exhaustive wh-form
4.2 Internal *ob*-form: objective predicates

- ***objective predicates*** license another internal *ob*-form if they exhibit a legitimate *da*-correlate if they are not *inherently semi-implicative*

  davon hören ob 'hear about', daran zweifeln ob 'doubt', danach fragen ob 'ask for', and *darin irren ob '*be wrong about', **davon wissen ob* 'know about'.

  - Meaning:

    F hört davon ob M kommt

    F hears *da*-cor whether M comes

    If σ in *x verb da-cor ob* σ is a formula in the recursive build-up of a formula φ belonging to the range of validity of *x verb da-cor* φ, then *x verb da-cor ob* σ can be paraphrased by *x pred da-cor dass* $(\sigma \vee \neg\sigma)$. Imagine φ as *F hears about that P comes if M comes*. Then *F hears about whether M comes* and also *F hears about whether P is coming*.

4 Internal *ob*-form and non-exhaustive *wh*-form
4.2 Non-exhaustive *wh*-form

- ***non-exhaustive wh-form : wh-n-exh-ob***

  wh (A, [cor], verb, x) $\Rightarrow$ A verb *ob* μ

  - if verb allows an internal *ob*-form

    (es) bedenken wh 'consider', (*es/darüber) diskutieren wh 'discuss', (es) untersuchen* 'investigate', *davon hören wh* 'hear about'

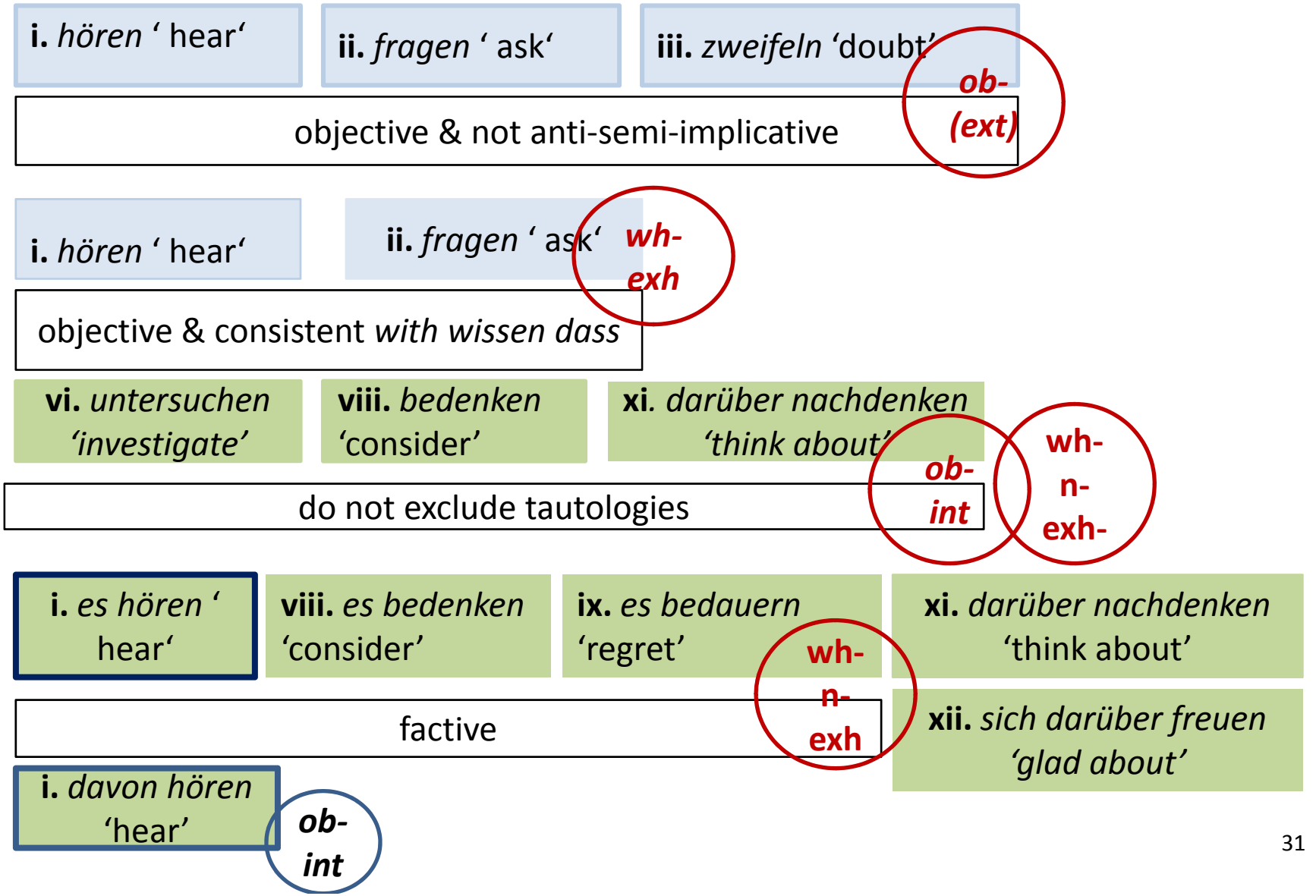
- ***non-exhaustive wh-form : wh-n-exh-dass***

  wh (A, [cor], verb, x) $\Rightarrow$ A verb *dass* μ

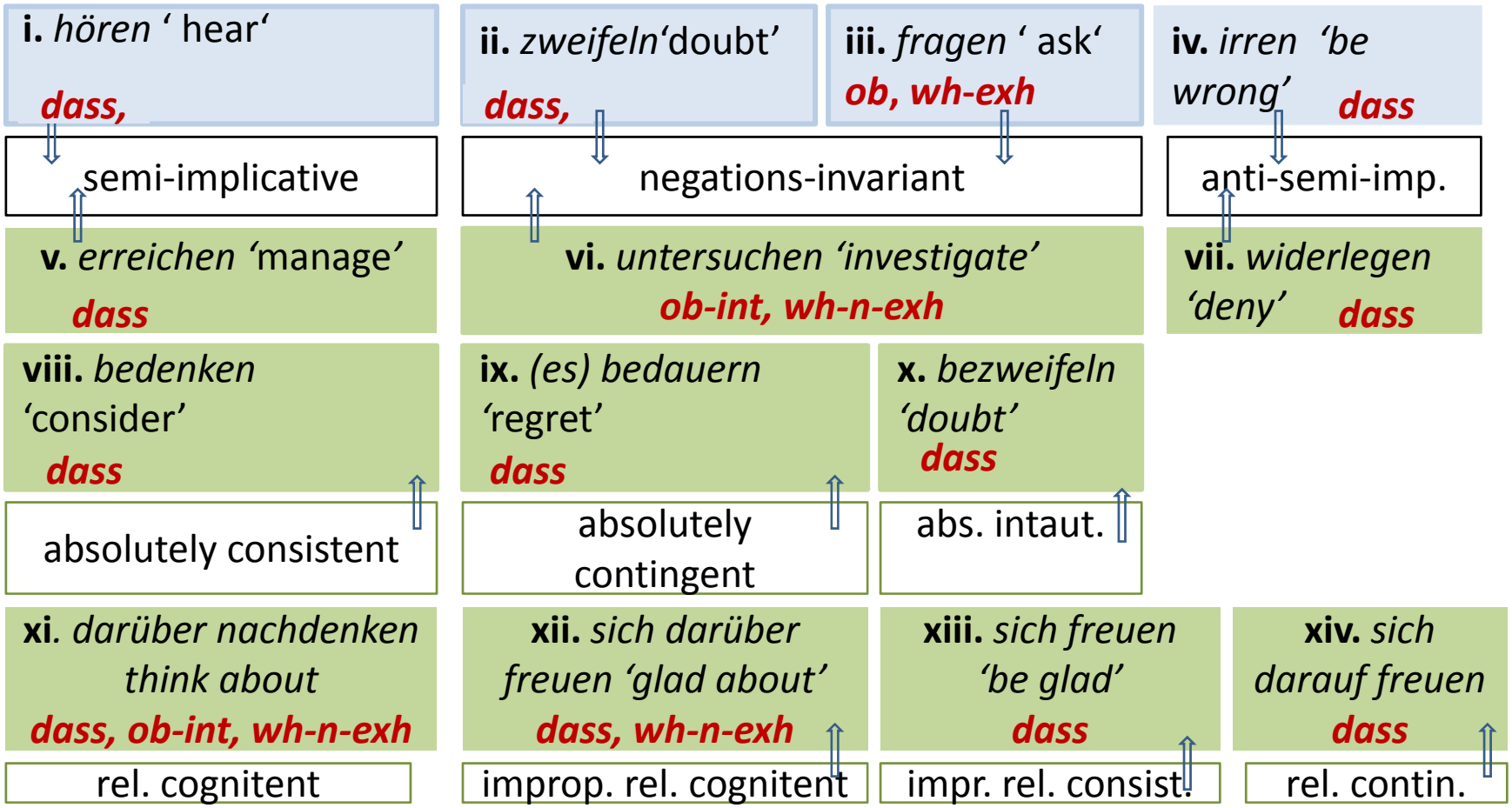
  - if the verb is (improperly) factive or (improperly) relatively cognitent, respectively, together with the legitimate *es*- or *da*-correlate

    *es bedenken wh 'consider', es bedauern wh 'regret' , sich darüber freuen wh '*be glad', **es beweisen wh* 'prove' [not factive], **es/darauf hoffen wh* 'hope', [*absolutely intautological/ impr. relatively consistent*]

Summary


i. hören ‘ hear‘
ii. fragen ‘ ask‘
iii. zweifeln ‘doubt’
objective & not anti-semi-implicative
ob-
(ext)
i. hören ‘ hear‘
ii. fragen ‘ ask‘
wh-
exh
objective & consistent with wissen dass
vi. untersuchen
‘investigate’
viii. bedenken
‘consider’
xi. darüber nachdenken
‘think about’
do not exclude tautologies
ob-
int
wh-
n-
exh-
i. es hören ‘
hear‘
viii. es bedenken
‘consider’
ix. es bedauern
‘regret’
xi. darüber nachdenken
‘think about’
factive
wh-
n-
exh
xii. sich darüber freuen
‘glad about’
i. davon hören
‘hear’
ob-
int

Summary


i. hören ‘ hear‘
dass,
ii. zweifeln‘doubt’
dass,
iii. fragen ‘ ask‘
ob, wh-exh
iv. irren ‘be wrong’
dass
semi-implicative
negations-invariant
anti-semi-imp.
v. erreichen ‘manage’
dass
vi. untersuchen ‘investigate’
ob-int, wh-n-exh
vii. widerlegen ‘deny’
dass
viii. bedenken ‘consider’
dass
ix. (es) bedauern ‘regret’
dass
x. bezweifeln ‘doubt’
dass
absolutely consistent
absolutely contingent
abs. intaut.
xi. darüber nachdenken think about
dass, ob-int, wh-n-exh
xii. sich darüber freuen ‘glad about’
dass, wh-n-exh
xiii. sich freuen ‘be glad’
dass
xiv. sich darauf freuen
dass
rel. cognitent
improp. rel. cognitent
impr. rel. consist.
rel. contin.

Examples
Correlates

(1) a. Wir werden (**es**) nicht ***verhindern***, dass die Athleten in unserem Sport immer versuchen, leicht zu sein und an Grenzen zu gehen.
DWDS BZ 2000

'We won't prevent **it** that the athletes will always try …'

b. In der alten Heimat ***lästern*** sie (**darüber**), dass es dort bestenfalls ein Popcorn-Kino gibt, aber keine Theater.

'… they gossip **about** …'

c. Allerdings **glaubt** fast die Hälfte der Chief Executives, daß Perot durchaus Chancen habe, die Wahl im November zu gewinnen,…
TIGER

' … nearly half the Chief Executives believe that ….'

Examples
Correlates

c'. Noch weniger hätte sie **es** geglaubt, dass sie dabei auch noch so unvergleichliche Lust empfinden und nach mehr und immer mehr verlangen würde. GBS Hoffmann 2007

'… she would not have believed **it** that she …'

c''. Ich habe noch bis in ein hohes Alter fest **daran** geglaubt, dass ich Wimbledon gewinnen könnte, gesteht Wes Anderson, … DWDS ZEIT 2001

' … I believed strongly **in** that I could win …'

d. Als Meißner ein paar Schritte lang schwieg, wandte sich der Nichtraucher Lautenschläger, unser Ältester, nach uns um und ***brummte***, ob uns **denn** heute nichts auffalle. GBS Piontek 1989

' … Lautenschläger … growled whether we haven't noticed anything.'

Examples
Clause types

(2) a. **dass**

glauben 'believe' - see (1c)

b. **dass-ob-wh**

*Später **hörte** ich im Autoradio, **dass** Rex Gildo in der Nacht gestorben war*. DWDS BZ 1999

'Later, I heard … that Rex Gildo passed away …,

*Die Unterhändler wollten nun von Ross hören, **ob** der israelische Regierungschef Benjamin Netanjahu ebenfalls zum Einlenken bereit sei*, … DWDS BZ 1998

'The negotiators wanted … to hear whether …'

*Genau, nur diese Person kann es machen", hatte der neue Senderchef Roger Schawinski prophezeit. Jetzt hört man, **wer** es ist, und denkt: Mhm*. DWDS BZ 2003

'Now one can hear who it is …'

Examples
Clause types

b‘. *Familien sollten **bedenken**, **dass** bei Kreditfinanzierung über viele Jahre enorme Ausgaben auf sie zukommen*.

‘Families should consider that …’

*Er brauchte zwei Stunden, weil er unterwegs ein paarmal abstieg, um eine Pfeife zu rauchen und zu bedenken, **ob** er nicht besser umkehren sollte*. DWDS Be 1946

‘… to consider whether he …’

*Wenn Sie bedenken, **wer** heute noch von den ehemaligen Mitgliedern des Forums als Minister tätig ist … kann man doch nicht klagen*. DWDS BZ 1994

‘If you consider who …’

Examples
Clause types

c. **dass-ob**

*Niemand zweifelt heute, **dass** Polen zu den ersten neuen Mitgliedern der Europäischen Union gehören wird*. DWDS BZ 2000

'Nobody doubts today that Poland will belong '

*Experten zweifeln, **ob** eine "Teillösung" den Spruch des Verfassungs-gerichts erfüllt..* DWDS BZ 1994

' Experts doubt whether …'

d. **dass-wh**

*Ich **bedauere**, **dass** Kenny unseren Sender verlässt*. DWDS BZ

'I regret that Kenny will leave the radio station'

*Zugleich bedauert man, **was für ein langer**, teurer, entnervender Weg zurückgelegt wurde, …*DWDS BZ 2005

'… one regrets what a long, expensive … way …'

Examples
Clause types

e. **ob-wh**

*Er hatte **untersucht**, **ob** Studenten, die tiefgründig studieren, um neue Erkenntnisse zu sammeln, besser bei Examen abschneiden.*

'He has investigated whether students …'

*Wissenschaftler **untersuchen** dabei, **wieviel** TNT im Boden geblieben ist*. DWDS BZ 1998

'Scientists investigated how much TNT remained in the soil'

f. **ob**

Ø

g. **wh**

Ø

REFERENCES

Égré, P. (2008), “Question-Embedding and Factivity”, *Grazer Philosophische Studien* 77, 85-125.

Égré P. & Spector B. (2007), “Embedded Questions Revisited: An Answer, not necessarily The Answer”. Ms, Harvard & IJN.

Ginzburg, J. & Sag, I. A. (2000), Interrogative Investigations, The Form, Meaning, and Use of English Interrogatives . CSLI Publications: Stanford.

Groenendijk J. & Stokhof M. (1982), “Semantic Analysis of Wh-Complements”, *Linguistics and Philosophy* 5, 117-233.

Lahiri, U. (2002), Questions and Answers in Embedded Contexts. Oxford Studies in Theoretical Linguistics, Oxford.

Meinunger, A. (2006), The discourse status of subordinate sentences and some implications for syntax and pragmatics', In V. Molnár & S. Winkler (Hrsgs): 'Architecture of Focus. Mouton de Gruyter: 459-487.

Schwabe K. & Fittler R. (2009), ”Semantic Characterizations of German Question-Embedding Predicates”, in: P. Bosch, D. Gabelaia, and J. Lang (eds.): TbiLLC 2007, LNAI 5422, 229-241. Springer-Verlag Berlin Heidelberg.

Stiebels, B. (2007), Towards a typology of complement control. In: Barbara Stiebels (ed.), *ZAS Papers in Linguistics* 47, 1-80