Interrogative complement clauses*

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Abstract
The paper will argue that root interrogatives and independently used complement interrogatives have in common that they are questions, i.e. interrogative functions. Whereas a root interrogative is the argument of the interrogative illocutionary operator INT, a complement-interrogative, which is verb-final in German, is an argument of a matrix predicate. The illocutionary operator contributes to creating the representation of an erotetic situation where the addressee of the utterance is directly involved. The matrix predicate, however, need not relate to such a situation. If it does, the erotetic situation already exists as a worldly entity and need not involve the addressee. This helps to explain why complement interrogatives without any linguist context (solitaires) cannot be used as canonical questions. It will be argued that the matrix predicate of an independently used interrogative is elliptical. If the independently used interrogative is a complement answer, the syntactically silent matrix predicate is specified by a preceding question. If there is not any linguistic context as it is the case with respect to solitaires, the syntactically silent predicate is represented as an existentially bound variable indicating the semantic underspecification of the solitaire. It will be shown that the matrix variable can only be specified by conceptual predicates which relate to situations which are accessible for the addressee. The choice of predicates, which can be triggered by linguistic means such as intonation, expressive particles, and particular pronouns determines the illocutionary force of the solitaire in question.

1 Introduction

Like many other languages, German provides different forms for independent and dependent interrogatives: verb-second (V2) as in (1a) and verb-final (V-final) as in (1b). Both forms can, however, be used non-canonically: V2-interrogatives can 'depend' on a matrix clause (2a) and V-final interrogatives can occur 'independently', either as the second part of a question/answer pair, as in (2b), or as *solitaires*, i.e. without any linguistic context, as in (2c-e). As for the 'independent' use of V-final interrogatives, the question arises whether they are the semantic equivalent of corresponding V2-clauses. This paper focuses on interrogatives, whereas Schwabe (2006, and to appear) deals with declaratives.

(1) a. *Wer kommt morgen?*
Who comes tomorrow
'Who will come tomorrow?'

b. *Anna fragt, wer morgen kommt.*
Anna asks who tomorrow comes
'Anna asks who will come tomorrow.'

(2) a. *Wann wird Hans sie$_i$ wohl heiraten, fragt sich Anna$_i$?*
when will Hans her PART marry ask REFL Anna
'When will Hans marry me, Anna wonders.'

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b. Q: *Was fragt Hans?*
'What is Hans asking?'
A: *Wer kommt.*
'Who is coming.'

c. *Was er wohl macht?*
What he PART is doing
'I wonder what he is doing.'

d. *Was er dort macht!*
what he there is doing
'What on earth he's doing there!'

e. *Ob es noch in Ordnung ist?*
whether it still in order is
'Is it still in order?'

Semantic equivalence does not obtain since, as is shown in (3), *ob*- and *wh*-solitaires cannot be analysed as direct question acts inasmuch as it is not necessary for the addressee to know the answer and, as is shown in (2d), they are not question acts at all – cf. Truckenbrodt (2004).

(3) attorney: **Ob Sie den Angeklagten kennen?*
Whether you the accused know

(3') attorney: *Kennen Sie den Angeklagten?*
'Do you know the accused?'

The paper is intended to show the syntactic, semantic, and pragmatic differences between interrogative solitaires and their corresponding root clauses. Section 2 presents the syntax and semantics of interrogative root and V-final clauses comparing them with declarative root and V-final clauses. It will be shown that the main difference between root clauses and V-final clauses is that the utterances of root clauses create complex assertoric or erotetical propositions which, as we will see in Section 2, do not belong to the *ordinary meaning* of the sentence but to its *expressive meaning* and represent specific illocutionary conditions including the proposition or question the root clause relates to.[1] The complex propositions are created as abstract objects with the help of the illocutionary functors ASSERT or INT which are functions from the set of ordinary sentence meanings to complex illocutionary propositions. As we will see in section 2, both operators are syntactically indicated. In contrast, German V-final clauses do not indicate any expressive illocutionary meaning. They only indicate their dependency on a matrix predicate. Together with this matrix predicate, a V-final clause denotes or implicates the representation of an assertoric or erotetic speech act. Since, as will be shown in Section 3, independently used declarative and interrogative V-final clauses are related to predicates which denote or implicate assertoric or erotetic speech act propositions, which already exist independently upon the utterance, independently used declarative and interrogative v-final clauses cannot be used to perform direct assertions or questions.

[1] As for the distinction between ordinary and expressive meaning see Potts (2003a) and Portner (this volume).

2 Canonically used interrogative root and complement clauses

2.1 Interrogative root clauses

Before discussing the semantic form and pragmatic function of interrogative solitaires, we determine the objects we are going to investigate. The notion *interrogative* (clause) denotes a syntactic object, i.e. a clausal phrase of a particular form which has a particular ordinary semantic meaning. The meaning of an interrogative is a semantic object. Following Portner (this volume) we regard it to be a pair $\langle A, C \rangle$, where A is the ordinary meaning and C is the set of expressive meanings. Expressive meanings, to which belong, for instance, vocatives, topics, and declarative, interrogative and imperative forces, are performatives and thus always true once understood. The illocutionary meaning we are interested in is indicated by syntactic features in ForceP. As shown below, we represent the ordinary meaning of an interrogative as a function from the set of answers into the set of propositions – cf. Krifka (2001a). The notion *answer* (*a*) denotes a semantic object as well, the object the question is applied to.

Similarly for declarative clauses. The notion *declarative* (clause) denotes a syntactic object the meaning of which is seen as a *propositional predicate* (*P*) – cf. (4). If the predicate is applied to a situation, a *proposition p* results as shown in (5). The notion proposition thus denotes a semantic object, an object representing that a situation is selected in which the description the propositional predicate *P* provides holds – cf. Barwise (1989: 185), Kratzer (2003) and Schwabe (2006).

(4) $\lambda s.\ s \models \sigma \quad = P$
(5) $\exists s.\ s \models \sigma \quad = p$

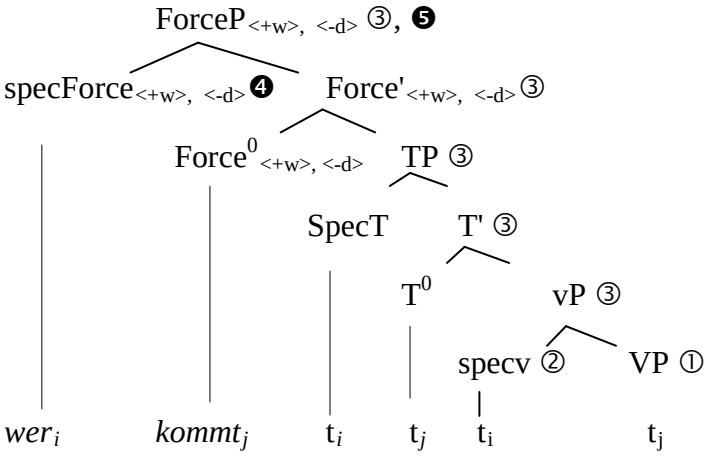
Situation variables *s* represent situations s which are worldly objects. Properties of situations and particular relations between them are regarded as state of affairs represented as the metavariable σ in (4) and (5). According to Barwise (1989: 185), we write 's ⊨ σ' if a situation s fulfills σ or σ holds in s. If σ is represented by the ordinary meaning of a clause, it relates to a *linguistically indicated situation* s_i. If σ is not expressed lexically but, as shown below, derived from the illocutionary force of a declarative or interrogative clause, it holds in a *derived situation*. As Schwabe (2006) shows, a further situation type is necessary, a *propositional situation* s_p. According to Barwise (1989: 226), a proposition is a tool to classify "a different situation, one involving the cognitive activity of an agent in connection with his current focus situation". If one considers the obtain-relation between *s* and σ as a state of affairs, i. e. as a *proposition type p*, one can relate the latter to a *proposition token*, which can be called the propositional situation s_p – cf. (6).

(6) $s_p \models \underbrace{(\exists s.\ s \models \sigma)}_{p}$

As is shown in Schwabe (to appear), propositional situations are necessary as linguistic objects, e.g. i) to distinguish propositional situation matrix predicates like *believe* and *know*, for example, from simple situation predicates like *regret* and *want* and ii) to have a discourse referent for anaphoric expressions. As shown below, a propositional situation can be introduced into the Common Ground by the ASSERT operator, on the one hand, or by a matrix predicate, on the other.

Returning to interrogatives, German distinguishes between *wh*-interrogatives – clauses containing an interrogative *wh*-phrase – and yes/no interrogatives – clauses which have verb first or the complementizer *ob*. Similarly to declaratives, interrogatives have a functional category ForceP which determines the sentence type as well as the dependency of the clause on the sentential or non-sentential context. As for *wh*-interrogative root clauses like (7), their ForceP locates the feature combination <-d>, <+wh> determining the expressive, erotetic illocutionary force. Whereas <+wh> determines the interrogative sentence type and thus the syntactic movement of the *wh*-phrase to specForce, <-d> determines the independence of the clause and thus the movement of the finite verb to Force^0. The erotetic, illocutionary force which is determined by the form of the clause in that it provides the erotetic illocutionary oprator INT (7❹). The latter maps the ordinary meaning of the interrogative onto the conceptual representation of its illocutionary force. The conceptual representation of the illocutionary force of an interrogative is a complex erotetic proposition: "there is an erotetic situation $s_{utt\text{-}\alpha}$ such that α utters q pretending that he aims at the situation that some β provides the answer a" (7❺, ❺'). [2]

(7) *Wer kommt?*
'Who is coming?'



① $\lambda x\, \lambda s\, (s \vDash (\text{come}\ (x)))$
② $\lambda F\, \lambda x{\in}\text{PERSON}\, (\lambda s\, (F\ (x))\ (s))$
③ $\lambda x{\in}\text{PERSON}\, \lambda s\, (s \vDash (\text{come}\ (x)))$
❹ $\lambda q\, (\text{INT}\ (q))$
❺ $\text{INT}\, (\lambda x{\in}\text{PERSON}\, \lambda s\, (s \vDash (\text{come}\ (x))))$

[2] As for the full version of the INT meaning, see ❹' below. As to question situations see also Wunderlich (1976).

❹' $\lambda q\, \exists s_q{\in}S_Q\, \exists s_{utt\text{-}\alpha} \exists s_{intend\text{-}\alpha}\, (\pi_1 \wedge \pi_2)$

π_1 $= (s_{utt\text{-}\alpha} \vDash (\text{utter}\ (\alpha), (s_q)))$
π_2 $= (_{intend\text{-}\alpha} \vDash (\text{want}\ (\alpha), (\forall s_{cause\text{-}\beta}\, \exists s_{pass}{\in}S_{PASS}\, (s_{cause\text{-}\beta} \vDash (\text{cause}\ (\beta), (s_{pass}))))))$
S_Q $= \{s_q \mid (s_q \vDash q)\}$
S^{PASS} $= \{\ _{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}\beta} (\exists s_{intend\text{-}\beta}\, \exists s_P{\in}S_P\, (\exists s_{know\text{-}\alpha}{\in}\, S_{\,KNOW\text{-}\alpha} (\phi_1 \wedge \varphi_2)\}$
ϕ_1 $= (s_{utt\text{-}\beta} \vDash (\text{utter}\ (\beta), (s_p)))$
φ_2 $= (s_{intend\text{-}\beta} \vDash (\text{want}\ (\beta), (s_{know\text{-}\alpha})))$
$S^{KNOW\text{-}\alpha}$ $= \{s_{know\text{-}\alpha} \mid \exists s{\in}S_P\, (s_{know\text{-}\alpha} \vDash (\text{know}\ (\alpha), (s_p)))\}$
S_P $= \{s_p \mid s_p \vDash (\exists a\, \exists s{\in}\text{FACT}\, (\langle s, \langle q, a\rangle\rangle))\}$

❺' $\exists s_q \in S_Q \; \exists s_{utt\text{-}\alpha} \exists s_{intend\text{-}\alpha} \; (\pi_1 \wedge \pi_2)$

$\pi_1 = (s_{utt\text{-}\alpha} \vDash (\text{utter } (\alpha), (s_q)))$

$\pi_2 = (\forall s_{cause\text{-}\beta} \in \{s_{cause\text{-}\beta} \mid s_{cause\text{-}\beta} \vDash (\exists s_{pass} \in S_{PASS} \; (\text{cause } (\beta), (s_{pass})))\}$
$(s_{intend\text{-}\alpha} \vDash (\text{want } (\alpha), (s_{cause\text{-}\beta}))$

$S_q = \{s_q \mid (s_q \vDash (\lambda x \in \text{PERSON } \lambda s \; (s \vDash (\text{come } (x)))))\}$

$S_{pass} = \{s_{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}\beta} (\exists s_{intend\text{-}\beta} \; \exists s_p \in S_p \; (\exists s_{know\text{-}\alpha} \in S_{know\text{-}\alpha} (\phi_1 \wedge \varphi_2)\}$

$\phi_1 = (s_{utt\text{-}\beta} \vDash (\text{utter } (\beta), (s_p)))$

$\varphi_2 = (s_{intend\text{-}\beta} \vDash (\text{want } (\beta), (s_{know\text{-}\alpha})))$

$S_{know\text{-}\alpha} = \{s_{know\text{-}\alpha} \mid s_{know\text{-}\alpha} \vDash (\text{know } (\alpha), (s_p))\}$

$S_p = \{s_p \mid s_p \vDash (\exists a \; \exists s \in \text{FACT } (\langle s, \langle q, a \rangle \rangle))\}$

The ordinary meaning of the *wh*-interrogative results from the meaning of the *wh*-phrase *wer* ② which is regarded as function from predicates to questions. As is shown in (7❺'), the full version of (7❺), the illocutionary operator INT (7❹) creates a partial mental representation of an erotetic situation (7❺'). It says that there is first the utterance situation $s_{utt\text{-}\alpha}$ such that α utters the question token s_q and second the pretended intentional situation $s_{intend\text{-}\alpha}$ such that α wants all the situations $s_{cause\text{-}\beta}$ where β causes an answer assertion $s_{pass\text{-}a}$. [3] An answer assertion is represented as a complex illocutionary proposition consisting, at least, of the proposition ϕ_1 that β utters a proposition token s_p (cf. Schwabe 2006) and of the proposition φ_2 that β pretends wanting the knowledge situation $s_{know\text{-}\alpha}$ such that α knows s_p which, because it is an answer proposition, should denote a fact. [4] The answer proposition is a pair consisting of the question *q* posed by α and the answer *a* provided by β. Similarly to propositions representing an assertoric speech act, the proposition (7❺') represents partially an erotetic speech act. The erotetic as well as the assertoric propositions are created by the declarative or interrogative illocutionary operators ASSERT or INT and do not contribute to the ordinary meaning of the declarative or interrogative. Both operators are interface operators in that they map the ordinary meaning onto a proposition representing illocutionary competence. Unlike an erotetic situation denoted, presupposed, or implicated by the ordinary meaning of an interrogative verb, the erotetic situation introduced by INT is determined by the knowledge what illocutionary function a particular sentence form has. The proposition "α utters *q* pretending that he aims at the situation that *β* provides the answer *a*" which represents this erotetic situation is true if α utters the question token and pretends that he wants its answer. Since the expressive illocutionary meaning is always true when the question token is uttered i.e. performed, it is performative – cf. (Portner, this volume).

If a question *q* like (7③) is applied to its answer *a*, another semantic object, a *question*/*answer* pair, results. The latter is a structured propositional predicate, as is shown in (8①), the ordinary meaning of the answer clause where *Hans* is the answer to *q*. Since (8) is a declarative root clause, its expressive illocutionary meaning is represented by ASSERT (cf. (8❶).

(8) *Hans kommt.*
'Hans is coming.'

① $\langle \lambda x \in \text{PERSON } \lambda s \; (s \vDash (\text{come } (x))), \text{hans} \rangle$

[3] '(utter (α), (*q*))' means that α provides a perceptible structure which can be mapped onto the question *q*.

[4] A fact is regarded here as a state of affairs which exists in the actual world. As for a comprehensive definition of facts see Kratzer (2003).

❶ a. ASSERT (⟨λ*x*∈PERSON λ*s* (*s* ⊨ (come (*x*))), hans⟩)

b. $\exists s_{utt\text{-}\beta}\ (\exists s_{intend\text{-}\beta}\ (\exists s_p \in S_P\ (\phi_1 \wedge \varphi_2)))$

$\phi_1 = (s_{utt\text{-}\beta} \models (\text{utter}\ (\beta), (s_p)))$

$\varphi_2 = (s_{intend\text{-}\beta} \models (\text{want}\ (\beta), (s^{know\text{-}\alpha})))$

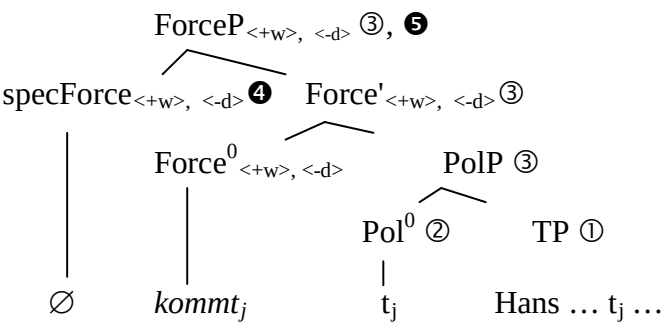
$s^{know\text{-}\alpha} = \{s_{know\text{-}\alpha} \mid \exists s \in S_P\ (s_{know\text{-}\alpha} \models (\text{know}\ (\alpha), (s_p)))\}$

$S_P = \{s_p \mid s_p \models (\exists a\ \exists s \in \text{FACT}\ (\langle s, \langle \lambda x \in \text{PERSON}\ \lambda s\ (s \models (\text{come}\ (x))), a\rangle\rangle))\}$

The assertoric proposition (8❶) partially represents β's answer act. It is created by the question/answer pair and the illocutionary operator ASSERT. It is true if first β, the addressee of (7❺), creates the utterance situation $s_{utt\text{-}\beta}$ such that he utters an independent question/answer pair token and second if there is the intentional situation $s_{intend\text{-}\beta}$ such that β pretends wanting the situation $s_{know\text{-}\alpha}$ where α knows the factive proposition that Hans is coming. Since the question in the question/answer pair is given by the preceding context, it is background and deaccented. Since the answer is not given, it is focus and bears the pitch accent. As will be shown in section 3, background constituents need not be phonologically realized.

As for yes/no-interrogatives like (9), they exhibit a similar syntactic structure to *wh*-interrogatives. The only difference is that their Spec-CP hosts an phonologically empty interrogative operator instead of a *wh*-phrase.[5]

(9) *Kommt Hans?*
'Is Hans coming?'



① λ*s* (*s* ⊨ (come (hans)))

② λ*p* λ*f*∈{λ*p* (*p*), λ*p* (¬*p*)} (*f* (*p*))

③ λ*f*∈{λ*p*∈*P* (*p*), λ*p*∈*P* (¬*p*)} (*f* (p))
p = (∃*s* (*s* ⊨ (come (hans))))

❹ λ*q* (INT (*q*))

❺ INT (λ*f* ∈{λ*p* (*p*), λ*p* (¬*p*)} (*f* (p)))

As in (7), the ordinary meaning of the yes/no-interrogative is represented as an interrogative function ③. It results from the meaning of ② which is applied to the propositional function given with ①. ② shows that the propositional content *P* of the interrogative is given in the restrictor of *f*. According to Krifka (2001a), the variable *f* is a function which maps a proposition either onto the proposition itself or onto its complement. If ② is applied to ①, the ordinary meaning of the yes/no-interrogative (9), a question, results. The answer to this question is a function which when applied to the answer proposition results in a proposition. Like in

[5] There are languages where the interrogative feature <+w> in yes/no-interrogatives is expressed by a lexical item. Some Slavic languages, for instance, indicate interrogativity by the clitic *li* – cf. Schwabe (2004).

(7), the <+wh>, <-d> features are represented as the expressive, illocutionary functor INT (9❹). When INT is applied to the interrogative function ③, the expressive, complex illocutionary proposition ❺ results. [6] It corresponds to the illocutionary conditions of an erotetic speech act. According to these, the agent of the interrogative act wants the addressee to cause an assertoric situation where he utters a propositional situation whose representation contains the answer and its corresponding question.

To conclude: root clauses are linguistically independent. If they are used, they are associated with an illocutionary operator which is an interface operator mapping a linguistic clausal object onto a complex proposition representing illocutionary knowledge. Whereas the assertoric operator ASSERT generates a proposition that represents an assertoric situation, the interrogative operator INT relates to a proposition representing an erotetic situation. The propositions are true if the assertoric or erotetic situations they denote are given in the actual world. Whereas the illocutionary operator provides a proposition which is not represented linguistically, matrix predicates in complement-clause constructions can provide a linguistic representation for such situations.

2.2 Complement clauses

Like declarative V2 clauses, *dass*-clauses have a ForceP the ordinary meaning of which is a propositional predicate. Their ForceP, however, is marked syntactically by the features <+d>, <-wh> indicating via the subordinator *that* dependency on a matrix predicate which is subcategorized for a <-wh>-clause. The matrix predicate determines that there is a situation *s* in which the propositional predicate given by the ordinary meaning of the *dass*-clause holds. The matrix predicate thus behaves like a determiner towards the complement clause.

As to matrix predicates which embed *dass*-clauses, we distinguish between matrix predicates that have propositional situation arguments (s_p) and those that have non-propositional situation arguments (s_i) – cf. Schwabe (2006) and (to appear). Predicates of the former group – we call them s_p-predicates – are for instance *glauben* (*believe*) and *hoffen* (*hope*). Predicates of the latter group – they are called s_i-predicates – are, for instance, *bedauern* (*regret*), *wollen* (*want*), and *zeigen* (*indicate*). If the HoldsIn-relation is not under debate, as is the case with respect to s_i-predicates, it is presupposed or projected that the particular state of affairs holds in an actual situation. Such matrix predicates are, therefore, always factual. As we shall see below, *dass*-clauses always have the same semantic representation, independently of whether they are embedded by s_i- or s_p-predicates. Example (10) demonstrates a *dass*-clause which is embedded by an s_i-predicate. Its ForceP hosts the features <+d>, <-wh> with <-wh> determining that there is no syntactic movement of a *wh*-phrase to specForce and <+d> determining that there is no expressive illocutionary meaning and therefore no overt movement of the finite verb to Force^0.

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[6] The full version of (9❺) is given below:

❺' $\exists s_q \in S_Q\ (\exists s_{utt\text{-}\alpha}(\exists s_{intend\text{-}\alpha}\ (\pi_1 \wedge \pi_2)))$

$\pi_1 = (s_{utt\text{-}\alpha} \vDash (\text{utter}\ (\alpha), (s_q)))$

$\pi_2 = (_{intend\text{-}\alpha} \vDash (\text{want}\ (\alpha), (\forall s_{cause\text{-}\beta}\ (\exists s_{pass} \in S_{PASS}\ (s_{cause\text{-}\beta} \vDash (\text{cause}\ (\beta), (s_{pass})))))))$

$S_Q = \{s_q \mid (s_q \vDash \lambda f \in \{\lambda p \in P\ (p), \lambda p \in P\ (\neg p)\}\ (f\ (p)))\}$

$S_{PASS} = \{_{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}\beta}(\exists s_{intend\text{-}\beta}\ \exists s_p \in S_P\ (\exists s_{know\text{-}\alpha} \in S_{KNOW\text{-}\alpha}(\phi_1 \wedge \varphi_2)\}$

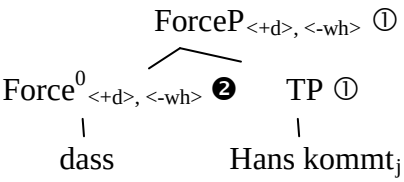
$\phi_1 = (s_{utt\text{-}\beta} \vDash (\text{utter}\ (\beta), (s_p)))$

$\varphi_2 = (s_{intend\text{-}\beta} \vDash (\text{want}\ (\beta), (s_{know\text{-}\alpha})))$

$S^{KNOW\text{-}\alpha} = \{s_{know\text{-}\alpha} \mid \exists s \in S_P\ (s_{know\text{-}\alpha} \vDash (\text{know}\ (\alpha), (s_p)))\}$

$S_P = \{s_p \mid s_p \vDash (\exists a\ \exists s \in \text{FACT}\ (\langle s, \langle \lambda f \in \{\lambda p \in P\ (p), \lambda p \in P\ (\neg p)\}\ (f\ (p)), a\rangle\rangle))\}$

(10) *Anna bedauert, dass Hans kommt.*
'Anna regrets that Hans is coming.'



① $\lambda s.\ s \vDash$ (come (hans))
❷ ∅

⊨The matrix predicate ③ determines that there is a presupposed situation *s* in which the propositional predicate ① holds and that this situation is related to the matrix subject.

V^0_{mat}: ③ $\lambda P\ \lambda x\ \lambda s_{emo}\ \exists s \in S\ (s_{emo} \vDash \text{regret}\ (x),\ (s))$
$S = \{s \in \text{FACT} \mid \langle s, P \rangle\}$

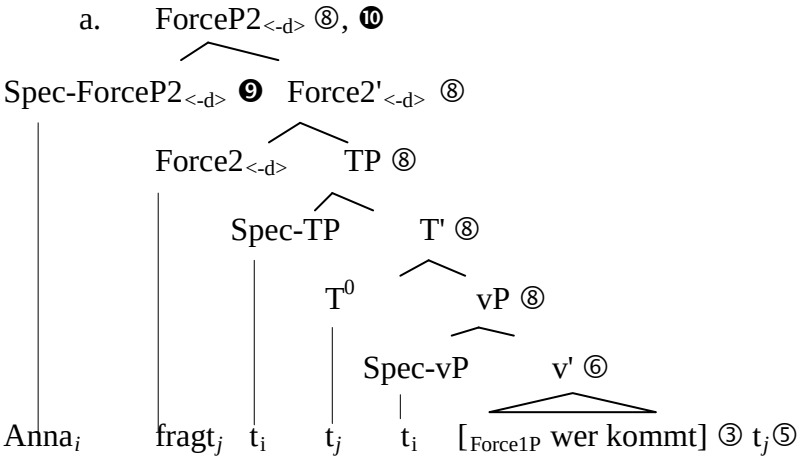
TP_{mat}:④ $\lambda s_{emo}\ \exists s \in S\ (s_{emo} \vDash \text{regret (anna)},\ (s))$
$S = \{s \in \text{FACT} \mid \langle s, \lambda s.\ s \vDash \text{(come (hans))} \rangle\}$

Since the matrix predicate determines that *s* is a fact, the truth of the proposition '$\exists s.\ s \vDash$ (come (hans))' is not in dispute. Therefore the proposition need not be related to a cognitive agent. As noted above, s_i-predicates like *regret* focus on a simple situation. The syntactic and semantic representation of their *dass*-clause, however, does not differ from the representation of the *dass*-clause in a construction with an s_p-predicate like *believe* – cf. Schwabe (2006).

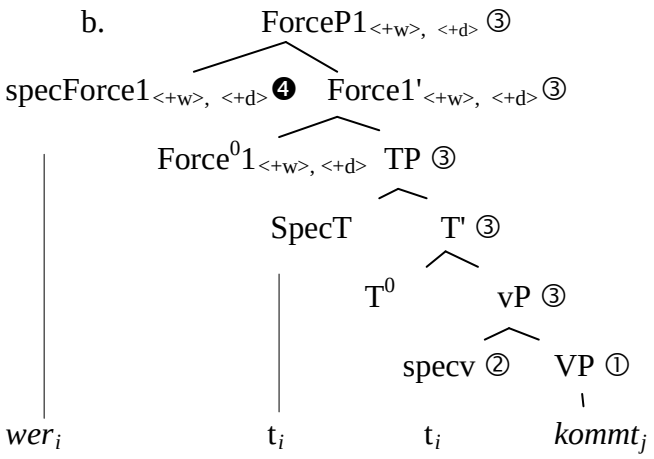
Like V-final declarative clauses, V-final interrogative clauses do not express illocutionary force. Their <+wh> feature determines that specForce hosts a *wh*-phrase and their <+d> feature indicates their dependency on a linguistic context, i.e. that there is no expressive illocutionary meaning. The semantics of the matrix predicate variable can relate the ordinary meaning of the interrogative – the interrogative function – to an erotetic situation s_{ero}. This situation is denoted if there is an interrogative matrix predicate like *ask*, as in (11). And it can be implicated if there is an s_p-predicates like *know* or *regret* – cf. (12).

(11) *Anna fragt, wer kommt.*
'Anna asks who is coming.'

a.



b.



① $\lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x)))$

② $\lambda F\ \lambda x{\in}\text{PERSON}\ (\lambda s\ (F\ (x))\ (s))$

③ $\lambda x{\in}\text{PERSON}\ \lambda s\ \ (s \vDash (\text{come}\ (x)))$

❹ $\varnothing$

⑤ $\lambda q\ \lambda y\ \lambda x\ \lambda s_{utt\text{-}x}\ \exists s_q{\in}S_Q\ \exists s_{intend\text{-}x}\ (\pi_1 \wedge \pi_2)$

π_1 $= (s_{utt\text{-}x} \vDash (\text{utter}\ (x), (s_q)))$

π_2 $= (s_{intend\text{-}x} \vDash (\text{want}\ (x), (\forall s_{cause\text{-}y}\ \exists s_{pass}{\in}S_{PASS}\ (s_{cause\text{-}y} \vDash (\text{cause}\ (y), (s_{pass})))))$

S_Q $= \{s_q \mid (s_q \vDash q)\}$

S_{pass} $= \{s_{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}y}\ (\exists s_{intend\text{-}y}\ \exists s_p{\in}S_P\ (\exists s_{know\text{-}x}{\in}\ S_{know\text{-}x}\ (\phi_1 \wedge \varphi_2)\}$

ϕ_1 $= (s_{utt\text{-}y} \vDash (\text{utter}\ (y), (s_p)))$

φ_2 $= (s_{intend\text{-}y} \vDash (\text{want}\ (y), (s_{know\text{-}x})))$

$S_{know\text{-}x}$ $= \{s_{know\text{-}x} \mid \exists s_p{\in}S_P\ (s_{know\text{-}x} \vDash (\text{know}\ (x), (s_p)))\}$

S_P $= \{s_p \mid s_p \vDash (\exists a\ \exists s{\in}\text{FACT}\ (\langle s, \langle q, a\rangle\rangle))\}$

⑧ $\lambda s_{utt\text{-}anna}\ \exists y\ \exists s_q{\in}S_Q\ \exists s_{intend\text{-}x}\ (\pi_1 \wedge \pi_2)$

π_1 $= (s_{utt\text{-}anna} \vDash (\text{utter}\ (\text{anna}), (s_q)))$

π_2 $= \forall s_{cause\text{-}y}\ \exists s_{pass}{\in}S_{PASS}\ (s_{intend\text{-}anna} \vDash (\text{want}\ (\text{anna}), (s_{cause\text{-}y} \vDash (\text{cause}\ (y), (s_{pass})))))$

S_Q $= \{s_q \mid (s_q \vDash \lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x))))\}$

S_{pass} $= \{s_{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}y}\ \exists s_{intend\text{-}y}\ \exists s_p{\in}S_P\ \exists s_{know\text{-}anna}{\in}\ S_{know\text{-}anna}\ (\phi_1 \wedge \varphi_2)\}$

ϕ_1 $= (s_{utt\text{-}y} \vDash (\text{utter}\ (y), (s_p)))$

φ_2 $= (s_{intend\text{-}y} \vDash (\text{want}\ (y), (s_{know\text{-}anna})))$

$S_{know\text{-}\alpha}$ $= \{s_{know\text{-}anna} \mid \exists s_p{\in}S_P\ (s_{know\text{-}anna} \vDash (\text{know}\ (\text{anna}), (s_p)))\}$

S_P $= \{s_p \mid s_p \vDash (\exists a\ \exists s{\in}\text{FACT}\ (\langle s, \langle \lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x))), a\rangle\rangle))\}$

❿ ASSERT (⑧)

❿' $\exists s_{utt\text{-}\alpha}\ \exists s_{intend\text{-}\alpha}\ \exists s_p'{\in}S_P'\ \exists s_{know\text{-}\beta}{\in}\ S_{KNOW\text{-}\beta}\ (\phi_1 \wedge \varphi_2)$

ϕ_1 $= (s_{utt\text{-}\alpha} \vDash (\text{utter}\ (\alpha), (s_p')))$

φ_2 $= (s_{intend\text{-}\alpha} \vDash (\text{want}\ (\alpha), (s_{know\text{-}\beta})))$

$S_{KNOW\text{-}\beta}$ $= \{s_{know\text{-}\beta} \mid \exists s{\in}S_P\ (s_{know\text{-}\beta} \vDash (\text{know}\ (\beta), (s_p)))\}$

S_P' $= \{s_p' \mid s_p' \vDash (\exists s\ (\langle s, ⑧\rangle))\}$

As we can see in (11), the matrix predicate meaning ⑤ takes the question ③ as argument thus yielding the predicate 'x utters a question token to cause someone to provide the answer proposition'. The answer proposition s_p is a question/answer pair, i.e. a structured proposition, where the question is given by the interrogative clause and the answer is not given explicitly. If the predicate is mapped onto the subject *Anna*, a propositional function, the ordinary meaning of a declarative results. Since (11) is an independent clause, ASSERT is applied to ⑧. The expressive meaning ASSERT of a declarative clause with a matrix predicate like *ask* provides an utterance situation $s_{utt\text{-}anna}$ and thus a complex erotetic propositional situation s_{pero} which represents first, that a question token s_q represented by ③ is uttered by the matrix subject (cf. π_1 in ⑧) and second, that the matrix subject pretends wanting the addressee to provide an answer proposition (cf. π_2 in ⑧). In π_1 again, '(utter (anna), (s_q))' means that *Anna* provides a perceptible structure which can be mapped onto the question *q*. This structure can be the canonical question form as given in (7). Unlike an interrogative root clause, the utterance of a declarative root clause with an interrogative matrix predicate denotes an utterance situation where some person utters a question token. If there is such an utterance situation, it is created by a question act that is or was performed independently of the matrix clause. Whereas the conditions π_i of an erotetic propositional situation indicated by the illocutionary operator INT are always related to the speaker α and the hearer β, the conditions π_i provided by an interrogative matrix predicate are not necessarily related to α or β. This helps, as is shown below, to explain the particular effects of interrogative solitaires.

We have shown in (11) that an utterance containing an interrogative matrix predicate like *ask* denotes a complex erotetic situation. Predicates like *know*, *regret* (12) or *believe someone* (13), which also allow *dass*-complements, only allow the implicature of such a situation. Neither the utterance situation that Anna utters a question token nor the intentional situation that Anna wants an assertoric answer situation are denoted in (12) and (13).

(12) *Anna bedauert, wer kommt.*
'Anna regrets who is coming.'

ForceP1: $\lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x)))$
V^0_{matrix}: $\lambda q\ \lambda x\ \lambda s_{emo}\ \exists s{\in}S\ (s_{emo} \vDash \text{regret}\ (x), (s))$
$S = \{s{\in}\text{FACT} \mid \langle s, \langle q, a\rangle\rangle\}$
$\text{TP}_{\text{matrix}}$: $\lambda s_{emo}\ \exists s{\in}S\ (s_{emo} \vDash \text{regret (anna)}, (s))$
$S = \{s{\in}\text{FACT} \mid \exists a(\langle s, \langle \lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x))), a\rangle\rangle)\}$

(13) *Anna glaubt Hans, wer gekommen ist.*
Anna believes Hans.DAT who has come.

ForceP1: $\lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x)))$
V^0_{matrix}: $\lambda q\ \lambda x\ \lambda s_{believe}\ \forall s_p{\in}S_P\ (s_{believe} \vDash (\text{believe}\ (x), (s_p)))$
$S_P = \{s_p \mid s_p \vDash \exists s\ \exists a\ (\langle s, \langle q, a\rangle\rangle)\}$
$\text{VP}_{\text{matrix}}$: $\lambda x\ (\lambda s_p{\in}S_P\ \lambda s_{believe}\ (s_{believe} \vDash \text{believe}\ (x), (s_p)))$
$S_P = \{s_p \mid s_p \vDash \exists s\ \exists a\ (\langle s, \langle \lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x))), a\rangle\rangle)\}$
Hans.DAT: $\lambda P\ \lambda x\ \lambda s_p{\in}S_P\ \lambda s_{believe}\ \exists R\ ((R\ (\text{hans}), (s_p)) \wedge (P\ (x), (s_p), (s_{believe})))$
$\text{VP}_{\text{matrix}}$: $\lambda x\ \lambda s_p{\in}S_P\ \lambda s_{believe}\ \exists R\ ((R\ (\text{hans}), (s_p)) \wedge (s_{believe} \vDash \text{believe}\ (x), (s_p)))$
$\text{TP}_{\text{matrix}}$: $\lambda s_p{\in}S_P\ \lambda s_{believe}\ \exists R\ ((R\ (\text{hans}), (s_p)) \wedge (s_{believe} \vDash \text{believe (anna)}, (s_p)))$

As for the relational variable R provided by the dative interpretation in (13), its specification as 's_p is provided by Hans' allows the derivation of an erotetic situation.

It is obvious that neither *believe* nor *regret* can embed *ob* (*whether*)-clauses. The reason is that someone cannot believe or presuppose a proposition and its complement simultaneously.

To summarize: the ordinary meaning of declarative root and V-final clauses is represented as a function from situations into propositions and the ordinariy meaning of interrogative root and V-final clauses is represented as a question, i.e. a function from answers into functions from situations to propositions. The expressive meaning of a root declarative is represented as the operator ASSERT which maps the ordinary meaning of the declarative onto an assertoric propositional situation s_{pass}. And the expressive meaning of an interrogative root clause is represented as the operator INT which maps the question onto an erotetic propositional situation s_{pero}. The propositional situations s_{pass} and s_{pero} which are created with the help of ASSERT and INT are indicated by the sentential form, but not represented linguistically. They correspond to specific illocutionary conditions. German V-final clauses, however, do not exhibit expressive illocutionary meaning. Their ordinary meaning is an argument of a matrix predicate. If the matrix predicate is applied to the ordinary meaning of the V-final clause, the latter can be related to an assertoric or erotetic situation which exists as a worldly object independently of uttering the V-final clause. Since, as is shown in detail below, independently used interrogative verb-final clauses indicate dependency on a matrix predicate, they cannot be arguments of the illocutionary functors ASSERT or INT. Thus, they cannot introduce assertoric or erotetic propositional situations into the Common Ground, i.e. they cannot be used as assertions or direct question acts.

3 Independently used interrogative verb-final clauses

3.1 Syntax and semantics of independently used verb-final clauses

It is obvious that independently used declarative V-final clauses which represent a situation and interrogative solitaires which partially represent a situation do not denote this situation. Why do we interpret them to mean that such situations exist and what enables us to locate these situations in a particular world? How come that interrogative solitaires can be related to erotetic or emotive situations? Can we do this because there is in fact a silent syntactic structure that contributes to this interpretation? Or is there rather an algorithm at the interface between grammar and interpretation, as Stainton (2004) suggests for NP and PP fragments, that reconstructs propositions?

Unlike Reis (1985), Oppenrieder (1989), Doherty (1979), and Truckenbrodt (2004) – but expanding on Schwabe (1994), Wilder (1994) and Merchant (2001, 2004) – one could argue that independently used verb-final clauses must be analysed as elliptical structures – cf. Schwabe (2006, to appear). The main arguments are as follows: i) Independently used verb-final clauses are constituents like independently used DPs. A minimum of syntactic structure is needed to explain the case of the DPs in (14) or the polarity item in (15).

(14) a. *Enan kafe* *parakalo*!
a coffee.ACC please
'A coffee please!'
b. *Vodu* *požal'sta*!
water.ACC please

(15) Any problems?

ii) Since adverbials (16), particles (17), and left dislocated phrases (18) can precede independently used verb-final clauses, they need a structural position.

(16) Q: *Was glaubt Anna*?
'What does Anna believe?'
A: *Hoffentlich, dass Hans kommt.*
'Hopefully that Hans is coming.'

(17) a. *Nicht, dass er jetzt an die Ostsee fährt!*
Not that he now to the Baltic drives
'Not that he drives to the Baltic now!'
b. *Nicht, dass er schön singt!*
Not that he well sings
'Not that he sings well!'

(18) i. *Einen Porsche zu kaufen, dass jeder das anstrebt!*
a Porsche to buy that everyone this wants
'That everybody wants to buy a Porsche!'
ii. [einen Porsche zu kaufen]$_i$ ... [$_{VP}$ [dass jeder das$_i$ anstrebt] [$_V{}^0$ e]]

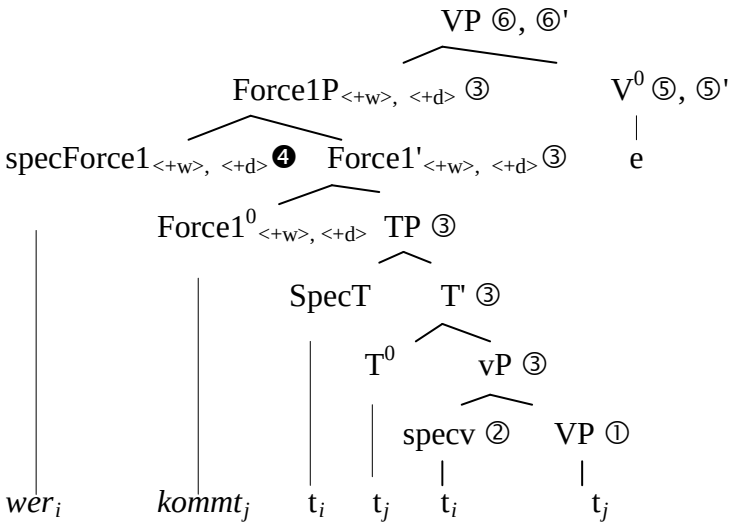
It follows that these independently used complement clauses have a syntactically silent matrix predicate. But unlike Merchant, who assumes that the silent material is syntactically and semantically complete but without phonological structure, we assume that matrix clauses have a minimalist syntactic structure that contains empty categories. An independently used verb-final clause thus has a syntactic structure as in (21) irrespective of whether it is an answer complement clause (19A) or a solitaire (20).

(19) Q: *Was fragt Anna?*
'What does Anna ask?'
INT (⑤)

A: *Wer kommt*.
'Who is coming.'

(20) a. *Wer (wohl) kommt?*
'I wonder who is coming.'
b. *Wer dort kommt!*
'I'm surprised who is coming there!'

(21)



① $\lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x)))$

② $\lambda F\ \lambda x{\in}\text{PERSON}\ (\lambda s\ (F\ (x))\ (s))$

③ $\lambda x{\in}\text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x)))$

❹ $\varnothing$

⑤ $\lambda q\ \lambda s_{utt\text{-}x}\ \exists y\ \exists s_q{\in}S_Q\ \exists s_{intend\text{-}anna}\ (\pi_1 \wedge \pi_2)$

$\pi_1 = (s_{utt\text{-}anna} \vDash (\text{utter}\ (\text{anna}), (s_q)))$

$\pi_2 = (s_{intend\text{-}anna} \vDash (\forall s_{cause\text{-}y}\ \exists s_{pass}{\in}S_{PASS}\ (\text{want}\ (\text{anna}), (s_{cause\text{-}y} \vDash (\text{cause}\ (y), (s_{pass})))))$

$S_Q = \{s_q \mid (s_q \vDash q)\}$

$S_{pass} = \{s_{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}y}\ (\exists s_{intend\text{-}y}\ \exists s_p{\in}S_P\ (\exists s_{know\text{-}anna}{\in}S_{know\text{-}anna}\ (\phi_1 \wedge \varphi_2)\}$

$\phi_1 = (s_{utt\text{-}y} \vDash (\text{utter}\ (y), (s_p)))$

$\varphi_2 = (s_{intend\text{-}y} \vDash (\text{want}\ (y), (s_{know\text{-}anna})))$

$S_{know\text{-}anna} = \{s_{know\text{-}anna} \mid \exists s_p{\in}S_P\ (s_{know\text{-}anna} \vDash (\text{know}\ (\text{anna}), (s_p)))\}$

$S_P = \{s_p \mid s_p \vDash (\exists a\ \exists s{\in}\text{FACT}\ (\langle s, \langle q, a\rangle\rangle))\}$

⑥ $\lambda s_{utt\text{-}x}\ \exists y\ \exists s_q{\in}S_Q\ \exists s_{intend\text{-}xanna}\ (\pi_1 \wedge \pi_2)$

$\pi_1 = (s_{utt\text{-}anna} \vDash (\text{utter}\ (\text{anna}), (s_q)))$

$\pi_2 = (s_{intend\text{-}anna} \vDash (\forall s_{cause\text{-}y}\ \exists s_{pass}{\in}S_{PASS}\ (\text{want}\ (\text{anna}), (s_{cause\text{-}y} \vDash (\text{cause}\ (y), (s_{pass})))))$

$S_Q = \{s_q \mid (s_q \vDash ①)\}$

$S_{PASS} = \{s_{pass} \mid (s_{pass} \vDash (\exists s_{utt\text{-}y}\ (\exists s_{intend\text{-}y}\ \exists s_p{\in}S_P\ (\exists s_{know\text{-}anna}{\in}S_{KNOW\text{-}A}\ (\phi_1 \wedge \varphi_2)\}$

$\phi_1 = (s_{utt\text{-}y} \vDash (\text{utter}\ (y), (s_p)))$

$\varphi_2 = (s_{intend\text{-}y} \vDash (\text{want}\ (y), (s_{know\text{-}anna})))$

$S_{KNOW\text{-}ANNA} = \{s_{know\text{-}anna} \mid \exists s_p{\in}S_P\ (s_{know\text{-}anna} \vDash (\text{know}\ (\text{anna}), (s_p)))\}$

$S_P = \{s_p \mid s_p \vDash (\exists a\ \exists s{\in}\text{FACT}\ (\langle s, \langle ③, a\rangle\rangle))\}$

As is shown in (21⑤), we obtain the semantic form of the syntactically silent matrix predicate of a complement answer by copying the question provided by the preceding question – cf. (19Q). The semantic form ⑥ results from applying ⑤ to ③. The illocutionary conditions of the preceding root interrogative determine that the answer act is an assertion – cf. π_2 indicated by INT in (21Q) and (7❺'). It follows that the illocutionary functor ASSERT is inferred

from π_2 in (21Q) and applied to ⑥. As is shown in (22a) and its full version (22b), the answer utterance is represented as an assertoric proposition. Recall that ASSERT is not even linguistically indicated by the independently used V-final clause. It is provided by the illocutionary conditions of the preceding interrogative.

(22) a. ASSERT (⑥)

b. $\exists s_{utt\text{-}\alpha}\, \exists s_{intend\text{-}\alpha}\, \exists s_p \in S_P\, \exists s_{know\text{-}\beta} \in S_{KNOW\text{-}\beta} (\phi_1 \wedge \varphi_2)$

$\phi_1 = (s_{utt\text{-}\alpha} \vDash (\text{utter } (\alpha), (s_p)))$

$\varphi_2 = (s_{intend\text{-}\alpha} \vDash (\text{want } (\alpha), (s_{know\text{-}\beta})))$

$S_{know\text{-}\beta} = \{s_{know\text{-}\beta} \mid s_{know\text{-}\beta} \vDash (\text{know } (\beta), (s_p))\}$

$S_P = \{s_p \mid s_p \vDash (\exists s \in \text{FACT } (\langle s, ⑥\rangle))\}$

Interrogative solitaires as in (20) differ from answer complement clauses in that there is no linguistic context which could provide a copy for their empty matrix predicate. Therefore, the semantic interpretation of this empty verbal element (21⑤') contains an existentially bound matrix predicate variable which, as is shown below, is specified by a predicate derived from the situative context. With this variable, the semantic structure of the solitaire ⑥' is underspecified.

(21) ⑤' $\lambda q \in \text{QUESTION } \exists M.\, M\, (q)$

⑥' $\exists M.\, M\, (\lambda x \in \text{PERSON } \lambda s.\, s \vDash (\text{come } (x)))$

Whereas the matrix predicate of the interrogative complement answers is copied from a contextually given question, the matrix predicate of a solitaire is represented as an existentially bound variable. The semantic structure of solitaires is therefore semantically underspecified. And whereas the illocutionary function of complement answers is determined by the illocutionary conditions of the preceding question act, the illocutionary function of solitaires is not similarly determined by the linguistic context. Their illocutionary function, however, can be triggered prosodically, by expressive expressions, and by the propositional content. If there is a rising accent L*H indicating the expressive meaning "α expects continuation of the utterance", the matrix predicate variable can only be specified by a volitional epistemic predicate resulting in an erotetic speech act. And if there is some kind of an expressive accent indicating the expressive meaning "α is surprised of a given situation", the matrix predicate variable can only be specified by an emotional matrix predicate resulting in an exclamative speech act. A particle like *wohl* triggers the erotetic interpretation (cf. (2c)) and an indexical like *dort* triggers the exclamative interpretation (cf. (2d)). If the interrogative contains its own answer as in *Was für eine überaus wundervolle Frau sie ist!* (*What an extremely wonderful woman she is*!), only an emotive predicate can specify the matrix predicate variable – cf. (Abels to appear).

Note that if there is any interpretational trigger, neither the erotetic nor the exclamative use are expressed syntactically by the sentence type.

3.2 Interpretation of interrogative solitaires

As far as answer complement clauses were concerned, we derived the semantic content of their matrix predicate from the linguistically given question. And since the expressive illocutionary meaning of the preceding erotetic act determines that the complement answer is an assertion, we could derive assertoric illocutionary force for them. As for interrogative solitaires, the specification of the matrix predicate variable is derived from the situative context.

The matrix predicate variable is specified by a non-linguistic but conceptual predicate which we write in small capitals. As shown in Schwabe (2006), the conceptual predicate for a *dass*-solitaire like (23), it can be an *emotive* predicate, so that the expression can be interpreted as an *exclamative* act. A *dass*-solitaires like (24) can have a conceptual *volitional* predicate determining a *command*. Note that the logical forms of (23) and (24) are represented as structured proposition with the *dass*-clause as focus and the situationally given matrix clause as background. The background is not expressed linguistically since it is given by the situational context – cf. Merchant (2001, 2004).

(23) *Dass* Hans kommt!
that Hans comes
'So Hans is coming!'
$\langle \lambda s.\ s \vDash (\text{come (hans)}), \lambda P\ (\exists s_{emo}\ \exists s \in S\ (s_{emo} \vDash \text{IS.AMAZED (anna)}, (s)))\rangle$
$S = \{s \in \text{FACT} \mid \langle s, P\rangle\}$

(24) *Dass Du mir jetzt an die Ostsee fährst*!
that you PRO1.SG.DAT now to the Baltic drive
'So drive to the Baltic now!'
$\langle \lambda s.\ s \vDash \vDash (\text{Baltic.drive } (\beta)), \lambda P\ (\exists s_{want}\ \exists s \in S\ (s_{want} \vDash \text{WANT } (\alpha), (s)))\rangle$
$S = \{s \mid \langle s, P\rangle\}$

The contextually given matrix predicates in (23) and (24) provide each a situation *s* so that the propositional function given by the semantics of the *dass*-solitaire can be applied to this situation. Emotive predicates are presuppositional while volitional ones are projective, i.e. their s_i-arguments are factual and related to propositions that are or will be true in the actual world. Thus the situations they focus on are easy to access. As for the situation emotive predicates focus on, it must deviate from a given norm to a certain extent. Volitional predicates focus on a situation that is not realised yet, but can be. The person who is amazed or wants something is the speaker α since he is the most salient person. The situations s_{emo} and s_{want} which are represented by 'AMAZE (α), (s)' and 'WANT (α), (*s*)' are given by the situational context as well. Here again, the reason is that these situations must be easily accessible for the addressee. The last observations explain why *dass*-solitaires cannot be used as assertions. They cannot because one condition of an assertion is not satisfied. It is the condition that α believes that β does not know the situation which is represented. The condition is not satisfied since β can perceive the situation.

Turning to the matrix predicate variable of *wh*-solitaires like (25a) and (25b), it can be specified by either an EMOTIVE or by a VOLITIONAL predicate. Again, these predicates focus on a situation *s* and relate it to their agent. The situation the predicate focuses on, the agent of the predicate, as well as the situation the predicate and its arguments represent are given by the situational context and are thus easy to access for the addressee of the utterance. As has been mentioned above, the specification of the matrix variable can be triggered by various linguistic means. In (25a), the sentential accent H*L triggers that the variable is specified by the emotive predicate BE.AMAZED.

H*L
(25) a. *Wer dort KOMMT!*
who there comes
$\langle \lambda x \in \text{PERSON}\ \lambda s\ (s \vDash (\text{come } (x))), \lambda q\ (\exists s_{emo}\ \exists s \in S\ (s_{emo} \vDash \text{IS.AMAZED } (\alpha), (s)))\rangle$
$S = \{s \in \text{FACT} \mid \exists a\ \langle s, \langle q, a\rangle\rangle\}$

In (25a), it is reconstructed that the speaker is amazed about a situation where a particular person is coming. The situation, which is in focus, is represented by a question/answer pair where only the question *q* is expressed. The answer *a* need not be expressed because the person who is coming is perceptible for all discourse participants.

As we can see in (25b), the matrix predicate variable of the under-specified semantic form (21⑥') is specified by the volitional epistemic predicate WANT TO KNOW. It has been mentioned above that the choice of this predicate is triggered by the rising sentential accent which indicates the expressive meaning "α expects continuation of the utterance".

(25) b. L*H
Wer wohl KOMMEN wird?
who PART will come

$\langle \lambda x \in \text{PERSON}\ \lambda s\ (s \vDash (\text{come}\ (x))), \lambda q\ (\exists s\ \exists s_{know\text{-}\alpha} \in S_{KNOW\text{-}\alpha}\ (s_{know\text{-}\alpha} \vDash \text{WANT}\ (\alpha), (s_{know\text{-}\alpha})))\rangle$

$S_{know\text{-}\alpha} = \{s_{know\text{-}\alpha} \mid \forall s_p \in S_P\ (s_{know\text{-}\alpha} \vDash (\text{know}\ (\alpha), (s_p)))\}$

$S_P = \{s_p \mid s_p \vDash (\exists a\ \exists s \in \text{FACT}\ (\langle s, \langle q, a \rangle\rangle))\}$

(25b) shows that the situation $s_{know\text{-}\alpha}$ which is represented as 'α knows the answer propositions to the expressed question *q* is related to α by the WANT-predicate. The addressee of (25b) can infer the proposition that α wants him to cause the situation $s_{know\text{-}\alpha}$. This optional inference is what distinguishes an interrogative solitaire from an interrogative root clause. Whereas the latter directly indicates that α wants β to cause the situation $s_{know\text{-}\alpha}$, (see π_2 in (7❺'), an interrogative solitaire only allows the inference of this proposition. Presupposed this inference occurs, an expression like (25b) can be interpreted as an indirect question act. Since, unlike with respect to root interrogatives, the addressee β of the derived π_2 is not necessarily the hearer, an interrogative solitaire is rather a deliberative question act where β is rather the speaker. If β were the hearer, α would choose the canonical question form.

Note that EMOTIVE predicates are restricted to *wh*-complement clauses only, i.e. they do not allow *ob*-complements – cf. (26). The reason is that the situation *s* they focus on is a fact and the factive proposition it contributes in constituting cannot be negated.

(26) **Ob Hans kommt!*
*'I am amazed whether Hans is coming.'

$\langle \lambda f \in \{\lambda p\ (p), \lambda p\ (\neg p)\}\ (f\ (\text{p})), \lambda q\ (\exists s_{emo}\ \exists s \in S\ (s_{emo} \vDash \text{IS.AMAZED}\ (\alpha), (s)))\rangle$
$p = (\exists s\ (\lambda s\ (s \vDash (\text{come}\ (\text{hans})))))$
$S = \{s \in \text{FACT} \mid \langle s, \lambda s\ (s \vDash (\text{come}\ (\text{hans})))\rangle\}$

Ob-solitaires can, however, occur if a volitional epistemic predicate is substituted – cf. (27).

(27) *Ob Hans kommt?*
whether Hans is coming
'I wonder whether Hans is coming?'

$\langle \lambda f \in \{\lambda p\ (p), \lambda p\ (\neg p)\}\ (f\ (\text{p})), \lambda q\ (\exists s\ \exists s_{know\text{-}\alpha} \in S_{know\text{-}\alpha}\ (s_{know\text{-}\alpha} \vDash \text{WANT}\ (\alpha), (s_{know\text{-}\alpha})))\rangle$

$S_{know\text{-}\alpha} = \{s_{know\text{-}\alpha} \mid \exists s_p \in S_P\ (s_{know\text{-}\alpha} \vDash (\text{know}\ (\alpha), (s_p)))\}$

$S_p = \{s_p \mid s_p \vDash (\exists a(\langle q, a \rangle))\}$

We have shown that the matrix predicate of complement answers is copied from a contextually given question and that the matrix predicate of solitaires is represented as an existentially bound variable. We have demonstrated that the illocutionary force of complement answers can be derived from the expressive erotetic meaning of the preceding question act. The illocutionary force of solitaires is determined by a conceptually reconstructed matrix predicate. The choice of the predicate can be triggered by intonation and particular lexical means. If L*H indicates continuation of the utterance, the matrix predicate variable can only be specified by a volitional epistemic predicate resulting in an erotetic speech act. And if there is some kind of an expressive accent indicating emotive expressive meaning, the matrix predicate variable can only be specified by an emotional matrix predicate resulting in an exclamative speech act. Since all mentioned interpretational triggers do not determine a particular sentence type in German, neither the erotetic nor the exclamative use of interrogative solitaires is determined syntactically by a sentence type.

4 Conclusion

All pragmatic interpretations of solitaires have in common that the specification of the matrix predicate variable is determined by the situative context. Therefore the agent is always the speaker. The situation that is fully or partially represented by the declarative or interrogative complement clause and the situation the reconstructed matrix clause represents are always factual. The reason for this is that these situations must be easily accessible for the addressee. Solitaires also have in common that their illocutionary force is not expressed directly syntactically, as is the case with the corresponding root clauses. Their illocutionary force results from the specification of the matrix predicate variable which can be triggered by intonation, the propositional content, and particular expressive lexical means. We have figured out three conceptual predicate types as possible specifications for the matrix predicate variable: i. '$\textsc{emo}$ (α), (s_i)', ii. '$\textsc{want}$ (α), (s_i)', and iii. '$\textsc{want}$ (α), ($s_{know\text{-}\alpha}$)'. All specifications of the matrix predicate variable have in common that they relate a situation, which is accessible for the addressee, to the speaker α. Predicates like *believe* or *hope* which relate a proposition to α are not possible. The reason for this is that propositions are not accessible for the addressee. If the matrix variable is conceptually specified by '$\textsc{emo}$ (α), (s_i)', α can perform an exclamative illocutionary act which can be supported by an expressive accent. $\textsc{emo}$-predicates have either *dass*- or *wh*-complements. A *dass*-complement fully represents the situation the predicate focuses on. A *wh*-complement represents the question part of the question/answer pair which represents the situation the predicate focuses on. This is possible since the answer of the question/answer pair is given by the situational context. If the matrix variable is conceptually specified by '$\textsc{want}$ (α), (s_i)', α can perform a directive speech act which can be supported by particular particles like *bloß* or the dative of the first singular pronoun. Such predicates allow only *dass*-solitaires. The reason why an interrogative solitaire is not possible is that the situation the predicate focuses on is anchored in a deontic context. In this context, the answer which is necessary to form the question/answer pair is not accessible for the addressee. If the matrix variable is conceptually specified by '$\textsc{want}$ (α), ($s_{know\text{-}\alpha}$)', α can perform a rogative speech act which is supported prosodically by rising intonation indicating that α wants a continuation of his utterance. Epistemic volitional predicates like '$\textsc{want}$ (α), ($s_{know\text{-}\alpha}$)' only allow interrogative complements. Unlike an interrogative root clause which establishes a question situation that always involves the addressee, an interrogative solitaire does not establish such an erotetic situation. This situation can, however, be inferred. Since it can be related to a different addressee than the addressee of the solitaire, the latter is not necessarily

the addressee of the question. This explains the deliberative character of interrogative solitaires.

Interrogative answer complements share with solitaires the property that they are arguments of a matrix predicate variable. The specification of this variable is given by the semantics of the preceding question. It is thus linguistically determined. But the illocutionary force of the interrogative complement is not determined by syntactically. That it is an assertion is predicted by the illocutionary conditions provided by the preceding interrogative act.

Syntactically, solitaires and answer complement clauses have in common that they have an elliptical clause structure inasmuch as the matrix predicate, which is contextually given, is syntactically empty. But they differ in the semantic form of this empty predicate. Whereas the semantic form of the matrix verb of complement answers results from copying the preceding question, the semantic form of the matrix verb of solitaires is semantically indeterminate, i.e. it merely provides the existential binding of the matrix predicate variable, the latter being specified on the pragmatic level.

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