Semantic properties of German solitaires

Kerstin Schwabe (Centre for General Linguistics (ZAS) Berlin)

The paper shows that German solitaires, which are used as directives, exclamatives, rogatives, ignoratives, and dubitatives, are linguistically underdetermined with respect to the expression of their illocutionary force and that their syntactic form indicates dependency on a matrix predicate. Therefore they exhibit an operator which maps each solitaire onto a particular set of propositions which are paraphrases of its illocutionary forces. Each proposition has the form α *verb* σ. The choice of the particular *verb* can be triggered by grammatical devices such as discourse particles, free dative, and prosody.

1 Introduction: Solitaires and root clauses

German, like many other languages, distinguishes between root and subordinate clauses. But contrary to many other languages, German can use its subordinate clauses like root clauses, i.e., the subordinate clauses exhibit a particular communicative or illocutionary force, respectively. Clauses which have the form of subordinate clauses, but are without any linguistic context, we call *solitaires*. The following examples exemplify that *dass*-solitaires can function as directives as well as exclamative speech acts; that *wh*-solitaires can be used as exclamatives, ignoratives, or questions; and that *ob*-solitaires can function as questions, ignoratives and dubitatives. A corresponding root clause is given only with respect to the directive and rogative use since only these uses are syntactically codified in German–cf. (1a'), (1e'), (1f'), and (1i').

(1)   a.   *Dass du   mir bloß an die Ostsee fährst!*   DIRECTIVE
          that you 1SG.DAT PART to the Baltic drive.
          'So drive to the Baltic!'

      a'.   *Fahr   an die Ostsee!*
          drive.IMP to the Baltic
          'Drive to the Baltic!'

      b.   *Dass die U-Bahn noch fährt!*   EXCLAMATIVE
          that the tube   still runs
          'Well I never, the tube is still running!'

      c.   *Wer dort kommt!*
          who there comes
          'Who on earth is coming there!'

      d.   *Wer schon kommt!*   IGNORATIVE
          who PART comes
          'I do not care who is coming.'

      e.   *Wer wohl dort kommt?*   ROGATIVE
          who PART there comes
          'I wonder who is coming there.'

      e'.   *Wer kommt dort?*
          who comes there
          'Who is coming there?'

      f.   *Ob Hans   wohl kommt?*
          whether Hans PART comes
          'I wonder whether Hans is coming?'

f'. *Kommt Hans?*

comes Hans
'Is Hans coming?'

g. *Ob   Hans schon kommt oder nicht.*   IGNORATIVE
whether Hans PART comes
'I do not care whether Hans is coming?'

h. *Ob Hans (tatsächlich) kommt?*   DUBITATIVE
whether Hans (really) comes
'I doubt whether Hans is coming?'

i'. *Die U-Bahn fährt (ja) noch!*   ASSERTION
the tube   runs PART still
'The tube is still running!'

The solitaire examples in (1) demonstrate that there is no one-to-one mapping between the clause type and its illocutionary force–cf. Table 1. In contrast, root clauses codify a particular type of speech act each–cf. Table 2. They also show that solitaires are never used as assertions. The reason for this is that solitaires relate to discourse-linked situations. Indicative root clauses, however, only introduce situations into the discourse–cf. Schwabe (2006, 2007b) and Meinunger (2006).

Table 1. Solitaires and illocutionary force

	Solitaire type		
	Declarative	Interrogative	
USE	*dass*	*wh*	*ob*
DIRECTIVE	(1a)		
EXCLAMATIVE	(1b)	(1c)	
IGNORATIVE		(1d)	(1g)
ROGATIVE		(1e)	(1f)
DUBITATIVE			(1h)

Table 2. Root clauses and illocutionary force

	Root clause			
	Imperative	Declarative	Interrogative	
USE	*Imp.*	∅	*wh*	∅
DIRECTIVE	(1a')			
INTERROGATIVE			(1e')	(1f')
ASSERTION		(1i')		

In addition to the observation that the syntactic form of solitaires corresponds to different illocutionary uses, one can state that solitaires, unlike root clauses, are not addressee-related. The contrast in example (2) demonstrates that root imperatives express the addressee-related-

ness whereas directive *dass*-solitaires do not–as for the non-addressee relatedness of rogative solitaires, see Truckenbrodt (2004).

(2) a. Police officer: *Folgen Sie mir!*
      follow.SG.IMP me
      'Follow me!'

  b. *#Dass Sie mir bloß folgen!*
      that you 1SG.DAT PRT follow

A third restriction of the use of solitaires is that they cannot be coordinated with a correspondent root clause.

(3) a. *#Fahr in den Irak und dass du dort vorsichtig bist!*
      go.IMP to the Iraq and that you there cautious are

  b. *#Wohin er wohl fährt und wann kommt er wieder?*
      where he PART goes and when returns he again

And finally contrary to root imperatives, *dass*-solitaires cannot be used as imperative conditionals – as for conditional imperatives cf. Gärtner & Schwager (2004):

(4) a. *Fahr nur nach Bielefeld und du wirst sehen, was passiert!*
      drive.IMP PART to Bielefeld and you will see what will happen

  b. **Dass du nach Bielefeld fährst und du wirst sehen, was passiert*!
      that you to Bielefeld go and you will see what will happen

To conclude: solitaires have illocutionary force, but they differ from correspondent root clauses with respect to its expression and content.

The paper will argue for the following hypotheses:

1. The syntactic form of solitaires merely indicates dependency on a *predicate*, whereas the syntactic form of root clauses indicates illocutionary force directly.
2. The grammatically underdetermined illocutionary force of solitaires is pragmatically determined. The pragmatic determination can be triggered by particular grammatical devices such as discourse particles, free dative, and prosody.
3. The pragmatic determination is characterised by semantic properties which are also relevant, for instance, for predicates embedding questions or root declaratives.

2 Illocutionary force of root and dependent clauses

Following Potts (2003, 2004) and Portner (2006), we regard the linguistically expressed illocutionary force as belonging to the *expressive* meaning of a sentence. It contributes to changing the knowledge or behaviour of a discourse participant. As for German, and many other languages, three linguistically expressed, basic illocutionary forces are distinguishable: *assertion*, *question*, and *directive*. We paraphrase a sentence with one of these illocutionary forces as follows:

i.	α wants β to believe σ	ASSERTION
ii.	α wants β to give an answer to the question	QUESTION
iii.	α wants β to cause a state of affairs described by σ	DIRECTIVE

3

The paraphrases *i-iii* each result from applying the illocutionary operators ASSERT, QUEST, or DIR to the ordinary meaning of a particular root clause type. As shown in Tables 3 and 4, German clause types are distinguished by the clausal features <wh> and <imp>–cf. Brandt et al. (1992) and, recently, Truckenbrodt (2006). The <wh> feature, classifying an *interrogative clause type*, is indicated by interrogative *wh*-phrases on the one hand, or by a rising pitch accent or the complementizer *ob* (*whether*) on the other. The <imp> feature, characterizing an *imperative clause type*, is indicated by imperative verb morphology–cf. Donhauser (1986), Brandt et. al. (1992), and Rosengren (1993). The *declarative clause type* is not marked in German. As for their clause type, root clauses and subordinate clauses do not differ–cf. Table 3 and 4. They differ, however, with respect to their status as being subordinate to a linguistic item or independent. The dependence of a clause is indicated by the final position of the finite verb and, if there is any, by the complementizer. The dependency property of a clause is indicated by the <d> feature. As shown in (5) and Table 4, there are no verb final imperative clauses in German.

(5) a. **Ich bitte dich, dass du das Buch lies!*.
          I ask you   that you the book read.IMP

Table 3. Syntactic form of root clauses

	Syntactic features	
Declarative		
Interrogative	<wh>	
Imperative	<imp>	

Table 4. Syntactic form of V-final clauses

	Syntactic features	
Declarative		<d>
Interrogative	<wh>	<d>

Root and complement clauses not differing from each other with respect to their clause type consequently do not differ with respect to their ordinary meaning. As shown in Table 5, we regard the ordinary meaning of declaratives, interrogatives, and imperatives as propositions σ. In contrast to declaratives, alternative interrogatives, and imperatives, a variable question is a set of variables characterised by σ–cf. Krifka (2001) and Huddleston and Pullum (2002).

Table 5. Ordinary meaning of syntactic forms

Syntactic form		Ordinary meaning
Declarative		σ
Interrogative	alternative	σ
	variable	$\{x \mid \sigma(x)\}$
Imperative		σ

If the clause is not <d> marked, the operators ASSERT, QUEST, or DIR are applied onto the ordinary clause meaning. Each operator maps the clause meaning onto one of the paraphrases, given above, *i-iii*:

Table 6. Illocutionary force of root clauses

Illocutionary function	Formula (map)	Illocutionary type
ASSERT (σ)	i. α wants β to believe σ	ASSERTION
QUEST (σ)	ii. α wants β to give an answer, either σ or $\neg\sigma$	QUESTION
$\forall x$(QUEST ($\sigma(x)$))	ii. For all x, α wants β to give either $\sigma(x)$ or $\neg\sigma(x)$	
DIR (σ)	iii. α wants β to cause a state of affairs described by σ	DIRECTIVE

The paraphrases show that the addressee β is always involved when a speech act is performed. We will see below that this need not necessarily be the case with respect to solitaires.

If the clause is <d> marked, it is, in its canonical use, the argument of a linguistically given predicate. Table 7 illustrates this with respect to matrix predicates like *wissen dass/ob* (know *that/whether*), *fragen ob* (*ask whether*), and *bedauern wer* (*regret who*). Notice that the statement *μ(maria, regret, kommen)* is the statement τ the question *who is coming* is related to. It corresponds to only one answer – cf. Schwabe & Fittler (2007).

Table 7. Linguistically given predicates

	Ordinary meaning of V-final constructions
Maria weiß dass P kommt.	Maria knows *dass* σ
Maria weiß ob P kommt	(Maria knows *dass* σ) $\vee$ (Maria knows *dass* $\neg\sigma$)
Maria weiß, wer kommt	For all x ((Maria *weiß dass* $\sigma(x)$) $\vee$ (Maria *weiß dass* $\neg\sigma(x)$))
Maria fragt, ob P kommt	Maria asks *ob* σ
Maria fragt, wer kommt	For all x (Maria asks *ob* $\sigma(x)$)
Maria bedauert es, wer kommt	Maria regrets it *dass* μ(maria, regret, kommen (max))

3 Grammatically underdetermined illocutionary force of solitaires

We regard solitaires as <d>-marked clauses without a linguistically given embedding predicate. They thus are clausal fragments which lack an embedding structure. Similarly to a case feature, the <d>-feature must be syntactically and semantically licensed. Syntactically, it is licensed by an empty verbal head–cf. Merchant (2001, 2004) for a slightly different approach. This empty head can be proven by negation (6a), discourse particles (6ab), and clausal (6c) as well as VP topicalization (6d)–as for the discussion of whether solitaires are fragments or sentence types by themselves, see Schwabe (2006).

(6) 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!'

     $[_{X1P}$ nicht $[_{VP} [_{X2P}$ dass er jetzt an die Ostsee fährt$]$ $e_V^o]]$

   b. *Schon dass der jetzt an die Ostsee fährt!*
     PART   that he now to the Baltic drives
     'And it is remarkable that he drives to the Baltic now!'

     $[_{X1P}$ schon $[_{VP} [_{X2P}$ dass er jetzt an die Ostsee fährt$]$ $e_V^o]]$

   c. *Und ob   ich ihn sah!*
     and whether I him saw
     'And whether I saw him is beyond question.'

     $[_{ConjP}$ und $[_{XP1} [_{XP2}$ OB ich ihn sah$]_i [_{X1'} t_i$ $e_V^o]]]$

   d. *Sein Leben zu lieben, dass niemand das vergisst!*
     his life   to love   that nobody   this forgets
     'Nobody should forget to love his life.'

     $[_{X1P} [$sein$_j$ Leben zu lieben$]_i [_{X1'} e_V^o [_{XP2}$ dass niemand$_j$ das$_i$ vergisst$]]]$

If the clause is dependent and there is a syntactically silent predicate, as is the case with respect to solitaires, this silent predicate is interpreted as the operator *v*. Table 8 shows the solitaire meaning where the subordinate clause meaning is the argument of the operator *v*. Unlike ASSERT, QUEST, and DIR, this operator does not map the subordinate clause meaning onto only one formula paraphrasing the illocutionary force meaning. Consequently, the solitaire meaning is underdetermined as far its illocutionary use is concerned.

Table 8. Grammatically determined solitaire meaning

	Linguistically determined solitaire meaning[1]
(1a) *Dass Hans (bloß) kommt!* 'I want Hans to come!'	v (*dass* σ (hans))
(1b) *Dass Hans kommt!* 'Well I never, Hans is coming'	
(1c) *Wer (dort) kommt!* 'I am surprised at who is coming.'	v (\{$x \mid \sigma(x)$\})
(1d) *Wer dort (schon) kommt!* 'I do not care who is coming.'	
(1e) *Wer (wohl) kommt?* 'I wonder who is coming.'	
(1f) *Ob Hans (wohl/tatsächlich/schon) kommt?* 'I wonder whether Hans is coming.'	v (*ob* σ (hans))
(1g) *Ob Hans (schon) kommt oder nicht?* 'I do not care whether Hans is coming.'	
(1h) *Ob Hans (tatsächlich) kommt?* 'I doubt whether Hans is coming.'	

---

[1]   The meaning of discourse particles is neglected here.

The operator *v* maps the solitaire meaning onto a set of propositions which paraphrase its potential illocutionary force. Such a proposition has the form '*verb σ*' with *verb* ranging over characteristic solitaire predicates. The domain of the operator *v* is thus the set of all solitaires: {solitaire type σ | solitaire type ∈ {*dass*, *wer*, *ob*}, σ∈PROPOSTIONS}

(7)   *V*: solitaire type σ |→{*verb* σ |*verb*∈characteristic of solitaire type}

The operator can be in the scope of negation or a discourse particle, as shown in (6a, b).

4   Force of solitaires

The operator *v* maps a solitaire onto the union of the following sets of propositions shown in (8). Each proposition is a paraphrase of the illocutionary force of the solitaire. This means that a paraphrase is not to be regarded as a linguistically given proposition. We thus do not pursue a performative analysis–for a critical review of the performative analysis see Zaefferer (1984).

(8)   *v* (*dass σ*)   =   {*α wants σ, α demands σ, …*}∪{*α is surprised at σ, α regrets σ…*}
      v ({*x* / *σ*(*x*)})   =   {*α is surprised at μ(α, surprise, σ), …*} ∪ {*α ignores μ(α, ignore, σ)*,
                      …} ∪ {For all *x*, *α wonders whether σ(x), …*} ∪ {For all *x*, *α wants to know whether σ(x), …*}
      v (*ob σ*)   =   {α *wonders whether σ, …*} ∪ {α *doubts whether σ, ...*}

Each proposition is a paraphrase of the communicative force of the solitaire. It is the particular communicative setting which determines which proposition is the pragmatically appropriate one. This means, for instance, that *v* maps *dass σ* onto the set *v (dass σ)* of paraphrases containing *α wants σ*, the paraphrase appropriate for the speaker *α* who wants *σ*. The particular embedding *verbs* are not arbitrary, as one can observe with respect to the different sets of propositions given above. Obviously, a set consisting of paraphrases such as *α knows that σ*, *α verifies that σ*, *α says that σ*, etc. is missing. There is neither a set consisting of *α believes that σ*, *α hopes that σ*, etc.. One also misses a set consisting of *α negates that σ* or *α falsifies that σ*. And finally, one also misses a set consisting of paraphrases like *α proves beyond doubt that σ* does not belong to the range of the operator *V*.

4.1   Characterisation of *verb* of *dass*-solitaires

The *verbs* of *dass*-solitaires like (1a-b) are characterised by the conjunction of four properties– cf. (8). As Schwabe & Fittler (2007) show, these properties as well as nearly all properties of embedding *verbs* shown in this paragraph are also relevant to determine which predicates allow the embedding of complement questions.

(9)   Characterisation of verb of *dass*-solitaires

        P1   *Verb* must not be *semi-implicative* **and**
        P2   *verb* must not be *anti-implicative* **and**
        P3   *verb* must not be *negation-invariant* **and**
        P4   *verb* is incompatible with the *Witness Existence Condition* (WEC*)*.

P1 saying a *verb* must not be semi-implicative excludes *prove beyond doubt* and *know* since *prove beyond doubt* and *know* are semi-implicative.

(10)   *Semi-implicativity*

       A *verb dass* σ → σ

P2 determining that *A verb* σ does not imply ¬σ excludes *verbs* like *refute* or *negate*.

(11)   *Anti-implicativity*

       A *verb dass* σ → ¬σ

P3 saying that *A verb dass* σ is equivalent to *A verb dass* ¬σ prohibits negation invariant *verbs*.

(12)   *Negation invariance*

       A *verb dass* σ ↔ A *verb dass* ¬σ

Negation invariance is a property of, for instance, *ignorieren* (*ignore*). If Maria is ignoring that Max is coming, she is also ignoring that he is not coming. And it is a property of *zweifeln* (*doubt*). If Maria doubts that Hans is coming, she also doubts that Hans is not coming. Consequently, neither *ignore* nor *doubt* can be the *verb* for a *dass*-solitaire.

    P4, a further property for *verb* of *dass*-solitaires, determines that *verb* is incompatible with the *Witness Existence Condition*.

(13)   *Witness Existence Condition WEC*

       For every σ there is some A fulfilling *A verb dass* σ *or A verb dass* ¬σ

Which *verbs* are incompatible with WEC is determined by the content of some kind of mental lexicon. The same holds for *verbs* which are compatible or incompatible with all aforementioned and still to be mentioned properties. *Verbs* like *glauben* (*believe*), *hoffen* (*hope*), and *wissen* (*know)* are compatible with WEC since in a constellation, for each σ there has to be a witness who believes, hopes, or knows that σ or that ¬σ. These predicates are therefore excluded as *verbs* for *dass*-solitaires.

    Verbs fulfilling the characteristics P1 to P4 can be subdivided into two groups:
    a.   *wollen dass* (*want that*), …
    b.   *überrascht sein dass darüber* (*be surprised at), bedauern dass* (*regret that),
             sich freuen dass darüber* (*enjoy that), ...*[2]

This means the operator *V* maps each *dass*-solitaire onto the set of propositions the *verbs* of which fulfil P1 to P4, thus being either volitional (*a*) or emotive (*b*). Emotive propositional paraphrases determine *exclamative*, whereas volitional ones determine *directive* speech acts.

    According to P1 to P4, a paraphrase of the illocutionary force of a *dass*-solitaire like (1a) *Dass du mir bloß an die Ostsee fährst!* (*So drive to the Baltic now!*) can be 'α *wants* β *to drive to the Baltic*'. The choice of the volitional *verb 'want'* is triggered by the 'free dative' and the particle *bloß*. A solitaire like (1b) *Dass die U-Bahn noch fährt!* (*Well I never, the tube is still running!*) can be paraphrased as 'α *is surprised at that the tube is still running*. The choice of

---

the *verb* is here triggered by the exclamative pitch accent–cf. Altmann (1987) and d'Avis (2002). Table 9 summarises the characteristics of the *verbs* of *dass*-solitaires. It shows that P1 to P4 are related to exclamative and directive speech acts, and how the choice of the particular *verb* and thus the speech act type can be triggered linguistically.

Table 9. Illocutionary force of dass-solitaires

verb trigger		verb characteristics	paraphrase	speech act
exclamative accent	P1	not semi-implicative,	α is surprised at σ	EXCLAMATIVE
	P2	not anti-implicative,		
	P3	not negation-invariant,		
	P4	incompatible with WEC		
free dative, *bloß*	P1	not semi-implicative,	α wants σ	DIRECTIVE
	P2	not anti-implicative,		
	P3	not negation-invariant,		
	P4	incompatible with WEC		

4.2 Characterisation of verb of *wh*-solitaires

Some characteristic properties of the *verbs* which are compatible with *wh*-solitaires are identical to P1 to P4 of *dass*-solitaires when they are used as exclamatives–cf. (1b) and (1c).

P1   *Verb* must not be *semi-implicative* **and**
P2   *verb* must not be *anti-implicative* **and**
P3   *verb* must not be *negation-invariant* **and**
P4   *verb* is incompatible with WEC **and**
P5   *A verb σ* implies σ is consistent.

P5, an additional *verb*-property of *wh*-solitaires, is necessary to exclude *verbs* like *wollen* (*want*). Fulfilling P1 to P5, *verbs* like *überrascht sein* (*be surprised*) are appropriate *verbs* for *wh*-solitaires.

If a *wh*-solitaire is used as an ignorative or a question, the *verb* is characterised as follows.

P6   *Verb* is *negation-invariant* **and**
P7   *verb σ* is compatible with *wissen ob* **and**
P8   *verb* is compatible with WEC.

P6 excludes *verbs* like *wissen* (*know), negieren* (*negate), beweisen* (*prove*), *überrascht sein* (*be surprised at*), and *glauben* (*believe*). P7 rejects *verbs* like *zweifeln* (doubt) and P8 excludes *verbs* like *prüfen* (*test*), *kontrollieren* (*control*). The predicates characterised by P6 to P7 are incompatible with the predicates characterised by P1 to P5. The reason for this is that P3 and P6 contradict.

If the *wh*-solitaire is used as a question, the *verb* can also be characterised by P9.

P9   *Verb* consists of *want to + VERB* being semi-implicative and compatible with WEC.

The property semi-implicative in P9 excludes *verbs* like *beweisen wollen* (*want to prove beyond doubt*) and *überrascht sein wollen* (*want to be surprised at*). It applies to *verbs* like *wissen wollen* (*want to know*) and *sehen wollen* (*want to see*).

P6 to P9 are fulfilled by all predicates being semantically equivalent to *ignorieren* (*ignore*) *fragen* (*ask, wonder*) and *wissen wollen* (*want to know*).

9

(14)   *Semantic Equivalence*

   verb ≈ *werb*
   {σ | ∃A (A *verb* σ)} = {σ | ∃B (B *werb* σ)}

To sum up so far: the operator *V* maps each *wh*-solitaire onto a set of propositions, the *verbs* of which fulfil P1 to P5 *or* P6 to P8 *or* P9.

(15)   *Characterisation for verbs of wh-solitaires*
   P1   *Verb* must not be *semi-implicative* **and**
   P2   *verb* must not be *anti-implicative* **and**
   P3   *verb* must not be *negation-invariant* **and**
   P4   *verb* is incompatible with WEC a**nd**
   P5   *A verb*σ implies σ is consistent
        or
   P6   *verb* is negation invariant (*invariant*) and
   P7   *verb* is compatible with *wissen ob* and
   P8   *verb* is compatible with WEC
        or
   P9   *Verb* consists of *want to + verb* being semi-implicative and compatible with WEC.

According to P1-P5, the paraphrase of the exclamative force of a *wh*-solitaire like (1c) *Wer dort kommt!* can, for instance, be 'α is surprised at who is coming'. This in turn might be an underdetermined fashion of expressing 'α is surprised that more than two persons are coming'. The proposition that more than two persons are coming then is the reason for α's surprise. We call the reason for this emotional state *specification μ*. The specification μ, which depends on the emotive subject α (the speaker), the *verb (be surprised at)*, and the basic predicate σ (*come*) is symbolised as *μ (α, be surprised at, come)*. It results from the answer to the question given by the *wh*-interrogative. Imagine the answer were *Hans, Fritz, and Max are coming*, then it is possible to conclude that more than two persons are coming. If this proposition belongs to the propositions which can cause α's surprise, it can be regarded as the specification μ for the expression (1c). The choice of the emotive *verb 'be surprised at'* is triggered by the exclamative accent.

   Concerning P6-P8, the illocutionary force *ignorative* of a *wh*-solitaire like (1d) *Wer schon kommt!* can be paraphrased by 'α *does not care who is coming*'. Here, the choice of the *ignore*-type *verb* is triggered by the discourse particle *schon*.

   P6-P8 also allow that the rogative force of a *wh*-solitaire like (1e) *Wer wohl kommt?* is paraphrased by 'α *wonders who is coming*'. P9 also determines a rogative, a rogative which is paraphrased by 'α *wants to know who is coming*'. The choice of the *wonder*-type or *want to know*-type *verb* is triggered by rising intonation and the discourse particle *wohl*. In comparing *emotive* with *ignore*- or *want to know*-type *verbs*, it becomes obvious that emotive *verbs* apply only to one proposition, to μ, the reason of the emotive state the emotive *verb* characterises. The *ask* or *want to know*-type *verbs*, on the other hand, apply always to set of propositions.

   Table 10 gives an overview of the characteristic features of the *verbs* of *wh*-solitaires, of the *verb* triggers, and over the particular speech act types a *wh*-solitaire can be classified as.

Table 10. Illocutionary force of wh-solitaires

Illoc. force trigger	*verb characteristics*		*paraphrase*	*speech act type*
exclamative accent	P1 P2 P3 P4 P5	not semi-implicative, not anti-implicative, not negation-invariant, incompatible with WEC, *A verb σ* implies *σ* is consistent	*α is surprised at µ*	EXCLAMATIVE
rising accent, *wohl*	P6 P7 P8	negation-invariant, *verb is* compatible with *wissen ob*, compatible with WEC	*For all x, α wonders whether σ(x)*	ROGATIVE
	P9	*Verb* consists of *want to + verb* being *semi-implicative* and compatible with WEC	*For all x, α wants to know whether σ(x)*	
schon	P6 P7 P8	negation-invariant, *verb is* compatible with *wissen ob*, compatible with WEC	*For all x,* *α ignores whether σ(x)*	IGNORATIVE

4.3   Characterisation of verb of *ob*-solitaires

The characteristic properties of the *verbs* which apply to *ob*-solitaires are similar but not identical to the properties of *wh*-solitaires corresponding to rogatives.

(16)   *Characterisation for verbs of ob-solitaires*
        P6   *Verb* is negation invariant **and**
        P8   *verb* is compatible with WEC
             or
        P9   *verb* consists of *want to + verb* being semi-implicative and compatible with WEC.

The *Characterization of ob-solitaires* (16) lacks P7, saying the *verb* is compatible *with wissen ob*. Recall that this condition was necessary for *wh*-solitaires to exclude *zweifeln* (*doubt*). Not excluding *zweifeln*, (16) allows interpretation of *ob*-solitaire as a *dubitative*. Both, (15) and (16), exclude *verbs* like *kontrollieren* (*control*) and *prüfen* (*test*) by (P8). In addition to *zweifeln* (*doubt*), (16) allows *ignorieren* (*ignore*), *fragen* (*wonder*), and *wissen wollen* (*want to know*).

According to P6, P8, and P9, we get the following paraphrases for the illocutionary force of *ob*-solitaires: '*α wonders whether Hans is coming*' or '*α wants to know whether Hans is coming*' for the rogative *Ob Hans wohl kommt?* (1f), '*α ignores whether Hans is coming or not'* for the ignorative (1g) *Ob Hans schon kommt oder nicht*, and '*α doubts whether Hans is coming.'* for the dubitative (1h) *Ob Hans tatsächlich kommt?*.

Table 11. Illocutionary force of ob-solitaires

Illocutionary Force trigger	verb characteristics		paraphrase	speech act
rising accent, *wohl*	P6 P8	*negation-invariant*, *verb* is compatible with WEC	*α wonders whether σ*	ROGATIVE
	P9	*verb* consists of *want to + verb* being *semi-implicative* and compatible with WEC	*α wants to know whether σ*	
tatsächlich	P6 P8	*negation-invariant*, *verb* is compatible with WEC	*α doubts whether σ*	DUBITATIVE
schon	P6 P8	*negation-invariant*, *verb* is compatible with WEC	*α ignores whether σ*	IGNORATIVE

5   Conclusion

We have shown that solitaires used as directives, exclamatives, rogatives, ignoratives, and dubitatives are linguistically underdetermined with respect to the expression of their illocutionary force. Their syntactic form, however, indicates dependency. Therefore they exhibit an operator v which maps the solitaire onto a particular set of propositions which are paraphrases of its illocutionary force. Each proposition has the form α *verb* ψ with ψ being either σ or a contextually given specification μ. The choice of the illocutionary force can be triggered by grammatical devices such as discourse particles, free dative, and prosody.

All *verbs* do not involve the addressee. This reflects the observation that a solitaire, seen as a speech act, is not as interactive as a root clause. We defined the *verbs* which are appropriate for the *dass-*, *wh-*, and *ob-*solitaire types by the features: P1 (*verb is not semi-implicative*), P2 (*verb is not anti-implicative*), P3 (*verb is not negation invariant*), P4 (*verb is incompatible with WEC*), P5 (*A verb σ implies σ is consistent*), P6 (*verb is negation-invariant*), P7 (*verb is compatible with wissen ob*), P8 (*verb is compatible with WEC*), and P9 (*verb consists of want to + verb being semi-implicative and compatible with WEC*). As Schwabe & Fittler (2007) show, these features partially contribute to determining whether a predicate can embed interrogatives. Negation-invariance (see P3 and P6) and the compatibility with WEC (see P4 and P8) distinguish the *verbs* for solitaires from each other. P3 is a characteristic for emotive and volitional *verbs* and thus for exclamative and volitional *dass-* and *wh-*solitaires. Whereas P3 is also characteristic for volitional *verbs* and thus for directive *dass-*solitaires, P5 excludes these predicates for *wh-*solitaires. P6 on the other hand, is typical for rogative, ignorative, and dubitative *verbs*, i.e., for the corresponding *wh-* and *ob-*solitaires. P7 is necessary to exclude dubitative *verbs* for *wh-*solitaires.

Table 12. Semantic features of solitaires

	Neg.-inv. P3 (-), P6 (+)	Compatible with WEC P4 (-), P8 (+)	A verb σ implies σ is consistent P5 (+)	Compa-tible with wissen ob P7 (+)
DIRECTIVE (1a) *α wants σ* 　　*Dass Hans (bloß) kommt!* 　　'I want Hans to come!'	-	-	-	-
EXCLAMATIVE (1b) *α is surprised at σ* 　　*Dass Hans kommt!* 　　'Well I never, Hans is coming!' (1c) *α is surprised at µ(α , surpr., σ)* 　　*Wer (dort) kommt!* 　　'I am surprised at who is coming.'	-	-	+	+
ROGATIVE (1e) *For all x, α wonders whether σ(x)* 　　*Wer (wohl) kommt?* 　　'I wonder who is coming.' (1f) *α wonders whether σ* 　　*Ob Hans (wohl) kommt?* 　　'I wonder whether Hans is coming.'	+	+	-	+
IGNORATIVE (1d) *α ignores µ(α, ignore, σ)* 　　*Wer dort (schon) kommt.* 　　'I do not care who is coming.' (1g) *α ignores σ and α ignores ¬σ* 　　*Ob H (schon) kommt oder nicht.* 　　'I do not care whether H is coming.'	-	+	-	+
DUBITATIVE (1g) *α doubts whether σ* 　　*Ob Hans (wirklich) kommt?* 　　'I doubt whether Hans is coming.'	+	+	-	-

　　We have emphasised that the matrix part of *α verb σ* is not fully expressed by the linguistic material given with a solitaire. The statement *α verb σ* is a paraphrase of the illocutionary force of the solitaire. It is determined linguistically by the ordinary meaning of the solitaire and, if there are any, by linguistic devices such as discourse particles or intonation. If these devices are not given, *verb* is exclusively determined pragmatically.

　　Dependent on the particular *verb*, it is possible to determine the speech act of the solitaire. A formula with a solitaire containing a volitional *verb* determines a directive, a formula with an emotive *verb* determines an exclamative, a formula with an ignore-type *verb* determines an ignorative, a formula with an rogative *verb* determines a rogative, and, finally, a formula with a dubitative *verb* determines a dubitative.

References

Altmann, Hans.
    1987   "Zur Problematik der Konstitution von Satzmodi als Formtypen". In *Satzmodus zwischen Grammatik und Pragmatik*. Jörg Meibauer (ed.), Tübingen: Niemeyer, 22-56.

d'Avis, Franz-Josef
    1992   *Über 'w-Exklamativsätze im Deutschen'*. Tübingen: Niemeyer.

Brandt, Margareta, Marga Reis, Inger Rosengren, Ilse Zimmermann
    1992   "Satztyp, Satzmodus und Illokution". In *Satz und Illokution* vol. 1., Inger Rosengren (ed.), Tübingen: Niemeyer, 1-90.

Donhauser, Karin.

    1986   *Der Imperativ im Deutschen: Studien zur Syntax und Semantik des deutschen Modussystems*. Hamburg: Buske.

Gärtner, Hans-Martin, & Magdalena Schwager
    2004   "Pseudo-Coordination Meets the Type/Force-Square". Unpublished Manuscript, Berlin and Frankfurt/M.

Huddleston, R. and Pullum, G. K
    2002   *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.

Krifka, Manfred

    2001   "For a structural account of questions and answers". In *Audiatur Vox Sapientia. A festschrift for Arnim von Stechow* [Studia Grammatica 52]. C. Féry and W. Sternefeld (eds.), 287-319. Berlin Akademie Verlag.

Meinunger, André

    2006   "On the discourse impact of subordinate clauses". In Interrogative complement clauses. In *The Architecture of Focus*, Valeria Molnár and Susanne Winkler (eds.), Berlin: Mouton de Gruyter, 459-488.

Merchant, Jason
    2001   *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*. Oxford: Oxford University Press.

    2004   "Fragments and Ellipsis". *Linguistics and Philosophy* 27/6: 661-738.

Portner, Paul
    2006   "Instructions for Interpretation as Separate Performatives". In Schwabe, Kerstin & Susanne Winkler (eds.), *On Information Structure, Meaning and Form*. Amsterdam/Philadelphia: John Benjamins, 407-426.

Potts, Chris
    2003   *The Logic of Conventional Implicature*. Ph. D. thesis, University of California at Santa Cruz.
    2004   "Conventional implicatures, a distinguished class of meanings". In G. Ramchand and C. Reiss (Eds.), *The Oxford Handbook of Linguistic Interfaces*. Oxford: Oxford University Press, 187-198.

Rosengren, Inger
    1992   "Zur Grammatik und Pragmatik der Exklamation". In *Satz und Illokution* vol. 1, Inger Rosengren (ed.), Tübingen: Niemeyer, 263-306.

1993　”Imperativsatz und 'Wunschsatz' – zu ihrer Grammatik und Pragmatik". In Rosengren, I. (ed.) *Satz und Illokution*, Band 1, Tübingen: Max Niemeyer Verlag, 1-48.

Schwabe, Kerstin

2006　”German *dass*-clauses”. In *The Architecture of Focus*, Valeria Molnár and Susanne Winkler (eds.), Berlin: Mouton de Gruyter, 429-458.

2007a　” Interrogative complement clauses”. In *On Information Structure, Meaning, and Form*. In Schwabe K. & Winkler, S. (eds.), Amsterdam: John Benjamins, 425-446.

2007b　”Old and new propositions”. In *Interface and interface conditions. Language, Context and Cognition*, Späth, Andreas (ed.), Berlin: Mouton de Gruyter, 97-114.

Schwabe, Kerstin & Fittler, Robert

2007　Semantic properties of question embedding predicates in German. Ms. ZAS Berlin.

Truckenbrodt, Hubert

2004　Zur Strukturbedeutung des Interrogativsatzes. *Linguistische Berichte* 199: 313-350.

2006　On the semantic motivation of syntactic verb movement to C. *Theoretical Linguistics* 32/3, 257-306.

Zaefferer, Dietmar.

1984　*Frageausdrücke und Fragen im Deutschen*. München: Wilhelm Fink Verlag.

Biographical note:

Kerstin Schwabe is researcher at the Centre for General Linguistics (ZAS) in Berlin. She works there in Hans-Martin Gärtner's project "The non-canonical use of verb-second and verb-final clauses", Regine Eckardt's and Manfred Krifka's project "Syntax and semantics of questions and answers from a typological perspective" and Barbara Stiebels project "Lexical conditioning of syntactic structures".