

The role of the subjunctive in the factivity-assertiveness alternation in German and Polish

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ABSTRACT

This article contributes to the discussion on the factivity-non-factivity alternation by providing evidence from German and Polish. Previous literature discusses various types of such an alternation by focusing on lexically factive verbs that can receive both a factive and a non-factive assertive(-like) interpretation depending on the type of the complement clause. In German and Polish, lexically factive verbs have a factive meaning if combined with an indicative clause, and that they have a non-factive reading if combined with a subjunctive clause. We show that such an alternation also occurs with some verbs of communication, which proves the general character of the alternation heuristics and the productivity in the language systems.

KEYWORDS (Anti-)factivity alternation · subjunctive · hearsay complementizer · communication verbs

1 INTRODUCTION

This paper is a contribution to the ongoing lively debate about the so-called assertivity-factivity-alternation, i.e., the challenge of the grammatical-lexical determinacy of factivity, mainly based on Kiparsky & Kiparsky (1970). According to such an approach, factive verbs presuppose the truth of their clausal complements. This can be illustrated by the contrast between a factive ‘know’ and a non-factive ‘believe’, as in (1) vs. (2):

- (1) John believes that Mary left, but she is still here.
- (2) #John knows that Mary left, but she is still here.

These examples show that a factive complement typically cannot be contradicted by the speaker, while a non-factive one can. Semanticists argue that factive predicates trigger presuppositions. The content of the factive complement holds true no matter what the context is like (the presence of matrix verb negation, question construction, or adverbial modification with modal expressions like ‘probably’). In earlier theories, this inference effect (presupposition projection) is hard-wired into the lexical structure of a given predicate. Subsequent research has shown that factivity has many facets and should be differentiated. One such divide is between “true” factivity on the one hand, which leads to logical entailment and “lesser” factivity on the other hand, which triggers implicatures, i.e., consequences that are generally valid but not logically necessary. The respective conclusion depends on the flexibility of the meaning of the factivity trigger, the syntactic and the situational context. Some progress has been made with the classification of factive and (so-called) semi-factive predicates. It has been observed that certain verbs (for example, *anticipate*, *acknowledge*, *suspect*, *report*, *emphasize*, *announce*, *admit*) receive a factive interpretation on the one side, and a non-factive interpretation on the other side. Cattell’s 1978 research on response-stance verbs is especially significant in this regard. The response-stance verbs are associated with an aspect to the effect that there has been a preceding utterance (for a specific realization of this, see below). In one

reading, the factive component may then be missing. In the case of many so-called emotive factives, the discussion of veridicality (cf. e.g., Giannakidou 1998, Egré 2008) has highlighted that the validity background of a statement (the world of thoughts) can or must be attributed to the individual holding the attitude, which transforms the so-called “fact” into a personal belief. As a result, the statement is no longer seen as an objective truth, which causes the suspension of the factivity presupposition. This can be seen with a range of emotive verbs such as *regret*, *be happy/sad/angry/proud*, *appreciate*, etc. A similar effect appears to occur with cognitive (factive) predicates such as *discover*, *realize*, *find out*, *be aware* (cf. Djärv et al. 2018).

Other studies have emphasized the role of (de-)focusing and information structure in determining or suspending factivity (e.g., Kallulli 2010 or Özyıldız et al. 2018). This somewhat orthogonal perspective is similar or connected to an aspect that plays an essential role in the present paper. Established information, whether assembled in previous discourse (= discourse old information), or imposed by obvious circumstances in the situative context, or facts belonging to undisputed world knowledge, are usually taken for granted by speaker and hearer. If such given information comes in the form of propositions, these propositions are very similar to facts, even if they cannot be equated with them. This explains the sometimes-cited dichotomy of assertivity versus factivity. The type of facts just described go somewhat beyond the classic narrow understanding sketched above; yet it remains the case that assertions must offer pieces of information which bring in disputable content. Neither facts in the narrow sense (logico-semantic) nor shared and agreed information between speaker and hearer can serve as the sole material to make assertions (or to entertain potential propositions – as we will see later).¹ For more on the tricky dependence or rather independence of the notions of (non-) factivity and communicative reports see Anand & Hacquard (2014). However, bear in mind that factivity and discourse givenness, although related, are not to be equated.

As the two previous sub-paragraphs indicate, more and more studies are questioning the deep and exclusive lexical determinacy of factivity of embedded clauses under the corresponding predicates. Some (more) of the important contributions were outlined in a comprehensive, fairly recent overview article by Degen & Tonhauser (2022). The authors show that an increasing number of researchers bring arguments and provide contexts showing when and how the alleged factivity of the verb can get suspended. Degen & Tonhauser state that these new contributions can be divided into two groups: those relying on pragmatics and those which ascribe the distinct factivity behaviors to different structural configurations (syntax, logical form). The present paper will adopt the latter approach.² A compelling case for the structural approach to different factive interpretations is provided by instances where the factivity and presupposition behavior of a predicate changes systematically depending on the type of morpho-syntactic frame it appears in, i.e., clear specific morphological or syntactic encoding triggers a clearly presuppositional (factive) reading or one which is not factive. Özyıldız (2017), for instance, examines a case where the Turkish verb *bil-* takes on the meaning of “factive” *know* when it combines with a nouny clause, but conveys the interpretation of “non-factive” *believe* when it takes a regular tensed object clause. In the same way, factivity alternation can occur with the use of alternative complementizers; it can further be triggered by sentential proforms, i.e., expletives or correlates, or similar elements, etc., see below.

One rather rare instance of factivity alternation, which we focus on in the present paper, is addressed in Özyıldız & Uegaki (2023:321); they call it “linguistic production inference”. This inference requires that the attitude holder says or otherwise produces an embedded clause. Özyıldız & Uegaki look at pertinent alternations in Turkish and

¹This does not mean that arguments of factive predicates cannot consist of new information. Facts can be novel and yet come in as presupposed. This slightly marked option works like comparable cases of accommodation. For more on the issue of new/old information vs. presupposition see Djärv (2019).

²Bondarenko (2023) argues convincingly that the approaches described can even coexist and need not be seen as incompatible at all.

Japanese. In these two languages, the clause-introducing morphemes *diye* and *to*, respectively, enforce the presence of a production inference and the lack of a truth inference in the case of emotive verbs like ‘surprise’ (traditionally referred to as “lexically” factive). The respective nominalized subordinate clauses that represent an alternative realization of a propositional complement do not introduce the production inference, and they must be interpreted as true. This shows that there is an interaction between the production inference and assertiveness. The Turkish and Japanese data further demonstrate the relationship between nominalization (or nouniness) and factivity, which plays an important role in the present paper as well. Consider the following Japanese examples (technically adapted from Özyıldız & Uegaki 2023:320).

- (3) Ai-wa [yuki-ga hutta-no-ni] odoroitā. (Japanese)
 Ai-TOP snow-NOM fall-NMLZ-DAT was.surprised
 ‘Ai was surprised that it was snowing.’ → p
- (4) Ai-wa [yuki-ga hutta-to] odoroitā. (Japanese)
 Ai-TOP snow-NOM fall-TO was.surprised
 ‘Ai was surprised that “it was snowing.” ↗ p

German exhibits a comparable pattern. This language has established a highly complex verbal (mood) system to explicitly mark clauses as referring back to previous utterances. The respective verbal mood shifts the factivity potential in a clear and systematic way. A similar phenomenon (but in a different morpho-syntactic configuration) can also be observed in Polish. The present paper addresses the relevant alternation in the two previously mentioned languages: German and Polish (cf. also Zuchewicz & Meinunger 2025). The following section (§2) introduces the reportative subjunctive in German, a verbal, non-indicative mood that indicates reported speech. The subsequent paragraph examines the role of verb position in subordinate clauses: verb-second vs. verb-final in German and the associated interpretative differences. It then demonstrates how both features influence the factivity and assertion behavior in complex sentences. Following this, a detailed analysis is provided of how the interaction of morpho-syntactic features in German is achieved in Polish through the choice of different complementizers (§3). Additionally, observations concerning the presence of an associated pronoun (clausal expletive) are discussed (§4). Finally, §5 presents a syntactically formal analysis of these observations. §6 concludes with a summary, recognizing factivity alternation as a pragmatic phenomenon and proposing to capture the interpretative differences structurally, as illustrated by the syntactic trees in the preceding §5.

2 SUBJUNCTIVE MOOD AND VERB SECOND IN GERMAN

2.1 THE REPORTATIVE SUBJUNCTIVE

Traditional German grammar and contemporary approaches both address a specific coercion shift: emotive and certain other factive predicates are systematically reinterpreted as communication verbs when interacting with a subordinate clause that features subjunctive morphology on the embedded verb. This special verbal mood is known as “Konjunktiv 1” in traditional morphology (reportative subjunctive; hereafter referred to as RS). The key observation is that matrix factive predicates lose their function as presupposition-triggers and are reinterpreted as communication predicates when the dependent clause features this specific subjunctive form.³ Consider (5) from Fabricius-Hansen & Saebø (2004:214).

³For traditional grammar see: Jäger (1971), Thieroff (1992), Eisenberg (1994), for more formal work see: Fabricius-Hansen & Saebø (2004) or Sode, e.g. (2023).

- (5) Das Gericht bedauerte, dass es nicht ermächtigt sei, ein Berufsverbot
 the court regretted that it NEG authorized be.SBJV a occupational.ban
 zu verhängen. (German)
 to award
 'The court regretted that it was not authorized to ban somebody from their
 profession.'

(5) does not mean that the court emotionally deplores its powerlessness, but rather that there was a statement from the court that contained the information that the court had no authorization to impose a professional ban. This means that German has an option for encoding speech reproduction with the specific subjunctive form. Hence, a clause whose finite verb appears in the RS reflects the content of a speech act. As a result, this option is typically only available in dependent, embedded sentences. By default, the RS appears under verbs of saying and communicating, as in (6).

- (6) Er behauptete, dass jemand das Auto angefahren habe. (German)
 he claimed that someone the car hit.PST.PTCP have.SBJV
 'He claimed that someone hit the car.'

Fabricius-Hansen & Saebo (2004:213) see the RS as redundant in these cases: the lexical meaning of the matrix predicate reveals that a communicative act has occurred. Things start to become interesting with verbs like *berichten*, *mitteilen*, *verraten*, *zugeben*, *eingestehen* (respectively: report, communicate, reveal, concede, admit). These verbs are communication verbs, but they are generally considered factive when used with the indicative mood. Grammarians such as Thieroff (1992) and Eisenberg (1994) argue that they lose their factivity when used with RS in the subordinate clause. Fabricius-Hansen & Saebo (2004) deny the obligatory loss of factivity but emphasize the main effect of the subjunctive as a marker of reportativity, that is, as a sign of a completed speech act. The latter stance can be interpreted as a weaker claim. For reasons of consistency with the overall picture, we are inclined to associate with Thieroff and Eisenberg: the verbs become communication verbs and as such their factivity trigger potential goes away – the associated inference is no longer given. (The same shift happens in Polish, see below.)

The phenomenon becomes more interesting with evaluative reportative predicates such as *loben* (praise) and *kritisieren* (criticize). These verbs describe an evaluative statement: with the indicative on the embedded finite verb, these predicates are clearly factive. However, if the dependent clause is in the RS, the meaning changes in such a way that the situation described by the statement is not presented in the subordinate clause as positive or negative for the speaker, but that the proposition itself is the (quasi-literal) reproduction of the original utterance. A sentence like (7) says that the lawyer disapproves (= criticizes) the fact that his client (K) was arrested. It is a fact, and this fact – that K was arrested – must never have been verbalized beforehand. The lawyer may know from the sheer circumstances that K is under arrest.

- (7) Der Advokat kritisiert, dass K. verhaftet worden ist. (German)
 the lawyer criticizes that K. arrested became.IND
 'The lawyer criticizes the fact that K. was arrested.'

Things are different with the RS. Fabricius-Hansen & Saebo (2004:233) discuss the contrasts (7), (8), and (9).

- (8) #Der Advokat kritisiert, dass K. verhaftet worden sei. (German)
 the advocate criticizes that K. arrested become be.SBJV
 (9) Der Advokat kritisiert, dass K. grundlos verhaftet worden sei.
 the advocate criticizes that K. gratuitously arrested become be.SBJV

(7) implicates that K. was arrested (= factive use). Sentence (8) is deviant, i.e., marked

by # as inappropriate because the subjunctive is not suitable for describing the lawyer's emotion, but rather reflects the lawyer's speech. But that is felt to be inappropriate because it is not particularly informative in the assumed context. (9) with the modifier *grundlos* (gratuitous, for no reason) sounds much more natural because the subjunctive signals the lawyer's speech, the purpose of which is to describe the arrest as gratuitous and thus to express criticism. The subjunctive here does not (directly) indicate an attitude, but the execution of a speech act with the same linguistic content. One of the main contributions of this paper is to show that this shift in the interpretation of the matrix verb, i.e., the loss of factivity, which comes with the coercion into a communication verb through the subjunctive mood, is the main ingredient that switches on the possibility of verb-second order within the subordinate clause.

2.2 MAIN-CLAUSE-LIKE VERB ORDER IN SUBORDINATED CLAUSES

While subordinate clauses in German typically appear in a verb-final configuration, it is well known that certain types of embedded clauses also allow for verb-second, which is typical of main clauses (Wechsler 1991, Reis 1997, Meinunger 2004, 2006).

- (10) Peter hofft, dass seine Tochter rechtzeitig nachhause kommt. (German)
 Peter hopes that his daughter on.time home comes.IND
 'Peter hopes that his daughter will come home on time.'
- (11) Peter hofft, seine Tochter kommt rechtzeitig nachhause. (German)
 Peter hopes his daughter comes on.time home

It is not universally agreed upon in research that these subordinate verb second clauses should be treated as embedded constituents (Reis 1997). However, we consider the classical variable binding – marked via the indexing in (12) – the most relevant argument for true embeddedness; only c-command can explain the bound reading of the embedded pronoun.

- (12) [_{CP} *Keiner_i* dachte, [_{CP} *es könnte ihn_i* treffen.]] (German)
 no one thought it could him.DAT happen
 'No one thought it could happen to him.'

Additional support comes from the Scandinavian languages, which show the same contrast: Verb second versus verb in base position. In Scandinavian, however, the complementizer is obligatory, providing evidence that the verb second clause is a truly embedded constituent (e.g., Wiklund et al. 2009). Moreover, in the Scandinavian languages as well as in German, the option of an embedded verb second clause is agreed to be strongly limited. Many authors see the factivity of the matrix predicate as a relevant feature that causes this limitation. Real factive predicates exclude the verb second option for the presupposed proposition. This claim can be proven by the contrast in (13) and (14).

- (13) Gerd bedauert, dass er nicht richtig gesungen hat. (German)
 Gerd regrets that he NEG correctly sung has.IND
 'Gerd regrets that he did not sing correctly.'
- (14) *Gerd bedauert, er hat nicht richtig gesungen.
 Gerd regrets he has NEG correctly sung
 (German)
 intended: 'Gerd regrets that he did not sing correctly.'

Over the years of research on the phenomenon described, other factors that also contribute to the blocking of the verb-second option have been identified. So, non-factive predicates, usually referred to as bridge verbs or assertive predicates, which do allow verb second as in (11) or in (15), do not allow the verb second option in certain contexts. For example, the V2 order is (usually) impossible under negation (17); only the standard

verb-final *dass*-option remains grammatical. It has also been observed that when the proposition is discourse old (i.e., given), the V2 option virtually disappears (Dunbar 1979: (19)).⁴ The situation is similar with certain readings that suggest a tendency towards a factive interpretation, cf. (20) vs. (21): Pinkal (1981) argues that three-place *glauben* (believe) is factive, and hence the verb second option vanishes (21).

- (15) Peter { sagt / glaubt }, die Erde ist flach. (German)
 Peter says believes the Earth is.IND flat.
 'Peter says/believes that the Earth is flat.'
- (16) Peter { sagt / glaubt }, dass die Erde flach ist. (German)
 Peter says believes that the Earth flat is
- (17) *Peter { sagt / glaubt } nicht, die Erde ist flach. (German)
 Peter says believes NEG the Earth is flat
- (18) Peter { sagt / glaubt } nicht, dass die Erde flach ist. (German)
 Peter says believes NEG that the Earth flat is
- (19) A: Wusstest du's schon? Maria ist wieder schwanger. (German)
 B: Ich weiß. Hab' gestern mit ihr telefoniert und...
 ... sie hat mir gesagt, dass sie wieder schwanger ist/ ??sie ist wieder schwanger.
 'A: Did you know it? Maria is pregnant again.
 B: I know. I had a phone call with her yesterday and...
 ... she told me that she is pregnant again/ ??she is pregnant again.'
- (20) Petra glaubt ihrem Nachbarn, dass seine Tochter schwanger ist. (German)
 Petra believes her neighbor that his daughter pregnant is
- (21) ??Petra glaubt ihrem Nachbarn, seine Tochter ist schwanger. (German)
 Petra believes her neighbor his daughter is pregnant

There is much evidence to suggest that the decisive factor in allowing for the use of V2 in the embedded clause is assertiveness and/or discourse novelty. The proposition of the dependent clause thus must at least be suitable for expanding the common ground between speaker and hearer. This is also confirmed by observations of Caplan & Djärv (2019), who discuss a type of doxastic factives, sometimes called "semi-factives", such as German *wissen* (know), *sich bewusst werden* (realize), *einsehen* (accept), etc. These verbs allow for a use where the embedded proposition is presented as something relevant and new. All these observations together show that predicates that are used factively in a very strict sense do not allow for the verb second order. In line with Gärtner ("proto-force" 2002), as well as Meinunger (2004, 2017), Djärv (2022), among others, we claim that the verb second option directly translates to (potential or "mediated", shifted or weakened) assertion that conveys novel information.

Most importantly for our purposes, once a potentially factive predicate is understood as a communication predicate, it no longer behaves like a typical factive predicate, and the V2 order, which is typical for main clauses, becomes possible for the embedded proposition. Evidence for this phenomenon can be found in the ZAS database of clause-embedding predicates (Stiebels 2018). Factive predicates in their presuppositional reading are not permissible with the subjunctive. However, with RS in the subordinate clause, they cease to be factive and instead become assertive. This is the precondition for the option to realize the argument clause in V2 form. *Bedauern* (regret) normally – which means as an emotive factive verb with only indicative in its complement clause – does not license verb second (14). Consider the following database examples with originally factive verbs, which, in their coerced communicative usage, permit a V2 structure – (23) with *bedauern*:

⁴Both observations are described in Dunbar (1979), but see also Truckenbrodt (2006:278, 295).

- (22) Sabais aber erinnerte sich, er habe Katia Mann darauf aufmerksam
 Sabais but remembered REFL he have.SBJV Katia Mann on.it attentive
 gemacht, einige seiner Freunde [...], saßen im Gefängnis [...]. (German)
 made some of.his friends sit.SBJV in jail
 ‘Sabais, however, remembered that he would have mentioned to Katia Mann
 that some of his friends would be sitting in jail.’ ZDB 4259: DWDS Zeit 1995
- (23) Sehr still und sehr kalt sei die Kindheit gewesen, bedauert eine
 very silent and very cold be.SBJV the childhood be.PST.PTCP regrets one
 ihrer Töchter [...]. (German)
 of.her daughters
 ‘The childhood would have been very still and cold, one of her daughters regrets.’
 ZDB 1447: DWDS BZ 2005

This coercion of an “initially” factive emotive predicate into a communication predicate is a systematic manner of re-interpretation. Although it is not discussed frequently in the literature, it is a productive process, which is one of the main topics of this contribution. Thus, the German RS renders a given predicate fully non-factive, enforcing a communication reading (5) or (22), (23). In these examples, the relevant assertion is being attributed to someone other than the speaker, most often to the subject of the matrix clause. As proposed in Meinunger (2004, 2006) and elaborated in Djärv (2022), V2 is used to contribute to the ongoing discourse by bringing in new information. The simplest scenario is that speakers use a simple V2 main clause and thereby propose to incorporate the proposition into the common ground shared by both the speaker and the hearer. In this case, speakers commit themselves to the proposition, a regular assertion. In more complex cases, V2-related effects can be achieved indirectly. A speaker can utter a complex clause containing a truly embedded clause. Using the V2 option for the embedded proposition, the speaker signals that they want to entertain the embedded proposition. The speakers are often less committed, or they even aim to express disagreement with the content of the embedded clause. Crucially, their main goal is to introduce the proposition as an active contribution to the ongoing discourse, which is achievable through the use of the subjunctive subordinate clause. In such a case, the dependent clause functions as a quasi-matrix, syntactically unembedded clause (for a syntactic proposal, see below). Note that in this respect, both standard communication verbs and ‘original’ factives used in a communicative sense pattern alike. RS signals low commitment of the speaker to the validity of the proposition. It is the verbal mood of the embedded finite verb that enables and forces the interpretation of the matrix verb as a communication predicate. There is a further observation to be made with emotive factives. There is an additional difference with respect to the strength of factivity. The presence of a pronominal element – often called a correlate or place holder – which is associated with the embedded clause has an impact on the factive interpretation. Schwabe (2013) and Hinterhölzl (2024) have observed that a potentially felicitous refusal of the embedded proposition is only possible in case the dependent clause does not come with a coreferential pronoun. If a place-holder like *es* appears, the matrix verb must count as undoubtedly factive (25); and the presence of *es* is completely natural without a corrective addition (26).

- (24) Leo bedauert sehr, dass Jan verloren hat, obwohl Jan eigentlich gewonnen
 Leo regrets a.lot that Jan lost has although Jan actually won
 hat. (German)
 has
 ‘Leo regrets very much that Jan has lost, although Jan has won.’
- (25) #Leo bedauert es sehr, dass Jan verloren hat, obwohl Jan eigentlich gewonnen
 Leo regrets it a.lot that Jan lost has although Jan actually won
 hat. (German)
 has

‘Leo regrets it very much that Jan has lost, although Jan has won.’

- (26) Leo bedauert es sehr, dass Jan verloren hat. (German)
 Leo regrets it a.lot that Jan lost has
 ‘Leo regrets it very much that Jan has lost.’

Thus, *bedauern* with an indicative complement seems to be “more” factive with the associated pronoun, but not necessarily so strongly factive if it is used without the proform. However, in both indicative cases, a purely emotive reading is referred to. This observation is orthogonal to the fact that (emotive) factives are assertive-like when they co-occur with the subjunctive. However, a certain parallel can be drawn with predicates embedding reported speech. Also, assertive predicates do not allow for verb second complements when they surface with a correlate (see Reis 1997 for example):

- (27) Leo hat (es) oft behauptet, dass Jan verloren hat. (German)
 Leo has it often claimed that Jan lost has.IND
 ‘Leo claimed (it) often that Jan has lost.’
- (28) Leo hat (*es) oft behauptet, Jan { hat / habe } verloren. (German)
 Leo has it often claimed Jan has.IND have.SBJV lost
 ‘Leo claimed (it) often that Jan has lost.’

The presence of the correlate signals very clearly that the content of the embedded clause is taken for granted by both speaker and hearer, i.e., taken to be a fact.

3 NON-FACTIVITY AND THE SUBJUNCTIVE IN POLISH

The following part of the paper is devoted to Polish, where the subjunctive is also responsible for the relevant factivity-assertiveness alternation. In contrast to German, Polish lacks the complementizer-less finite dependent clauses. However, there is a systematic way to modify the sentence structure to receive an assertive non-factive meaning of an embedded proposition independently of the (lexical) factivity property of the matrix verb: the insertion of the reportative complementizer *jakoby*.

There are several ways in which indicative vs. reportative embedding can affect the factivity potential of a matrix verb. Combining the indicative complementizer *że* and a cognitive or emotive verb yields a factive interpretation of an entire construction, cf. (29). However, the combination of the subjunctive hearsay-complementizer *jakoby* and a “lexically factive” predicate results in a non-factive report of someone else’s utterance, just like with the German V2-subjunctive subordinate clauses, cf. (30). Sentence (29) entails, under matrix verb negation, that Jan got drunk at work, and it asserts that he doesn’t remember it. Sentence (30) doesn’t entail that Jan got drunk at work. (30) verbalizes a report of Jan having uttered not being drunk/having denied being drunk at work, an assumption that was considered true by some epistemic agent (sentence speaker or someone else).

- (29) Jan nie pamięta, że upił się w pracy. (Polish)
 Jan NEG remembers ŻE got.drunk REFL in work
 ‘Jan doesn’t remember that he got drunk at work.’⁵
 → Jan got drunk at work (p).
- (30) Jan nie pamięta, jakoby upił się w pracy. (Polish)
 Jan NEG remembers JAKOBY got.drunk REFL in work
 ‘Jan doesn’t remember *jakoby* he got drunk at work.’
 ⇏ Jan got drunk at work (p).

(31) and (32) show a similar distribution with ‘betray’ in the affirmative matrix context.

⁵All examples we do not provide sources for are constructed by one of the co-authors, who is a native speaker of Polish. Such examples were additionally confirmed with at least one other native speaker of Polish.

- (31) Szef zdradził, że Jan ukradł komputer. (Polish)
 boss betrayed ŻE Jan stole computer
 ‘Our boss gave the information away that Jan stole the computer.’
 → Jan stole the computer (p).
- (32) Szef zdradził, jakoby Jan ukradł komputer. (Polish)
 boss betrayed JAKOBY Jan stole computer
 ‘Our boss gave the information away *jakoby* Jan stole the computer.’
 → Jan stole the computer (p).

Additionally, at least some verbs of communication in Polish are ambiguous between a factive and a non-factive reading; in these cases, we get the interpretative differences between communicating a fact/adding a fact to the common ground (through the *że*-clause), (34), and reporting someone else’s utterance (through the *jakoby*-clause), (33). In the latter case, the status of an embedded proposition equals the status of the proposition expressed by the *jakoby*-clause under the scope of lexically factive verbs. The only difference is that verbs of communication lack the emotive or the cognitive component of the report (that what the report is about is being regretted by someone, or that it came about as a result of some cognitive process like finding out). Both *jakoby*-cases carry a strong inference, at least an implicature, that the speaker maintains distance from or questions the truthfulness of the embedded proposition.

- (33) Policjant poinformował nas, jakoby Jan ukradł komputer. (Polish)
 policeman informed us JAKOBY Jan stole computer
 ‘The policeman informed us *jakoby* Jan stole the computer.’
 → The policeman has produced the sentence “Jan stole the computer”.
 → Jan stole the computer (p).
 → (implicates) The speaker does not believe that p.
- (34) Policjant poinformował nas, że Jan ukradł komputer. (Polish)
 policeman informed us ŻE Jan stole computer
 ‘The policeman informed us that Jan stole the computer.’
 → The policeman has produced the sentence “Jan stole the computer”.
 → Jan stole the computer (p).

3.1 ON THE *JAKOBY*-COMPLEMENTIZER

The *jakoby*-complementizer is one of two subjunctive complementizers in Polish. It needs to be distinguished from the *żeby*-complementizer which is a typical irrealis complementizer restricted to future-oriented uses like *prosić kogoś żeby* ‘ask someone to do something’ / *kazać komuś żeby* ‘request someone to do something’. *Żeby* differs from *jakoby* because the former appears in the above-mentioned future-oriented contexts, while the latter accomplishes a communicative function, and the two complementizers do not compete for use in these two types of contexts. We will not discuss *żeby* in greater detail, as the paper focuses on the reportative contexts.

An extensive study of the syntax and semantics of *jakoby* in modern Polish as well as its diachronic development has been conducted by Jędrzejowski (2020), cf. also important contributions by Łojasiewicz (1992) and Wiemer (2005, 2023). According to Jędrzejowski (2020), in modern Polish, *jakoby* functions as a subjunctive reportative C head that has undergone reinterpretation from the inferential C. The main and most common (and semantically and structurally unmarked) environment for *jakoby* is with verbs of communication like *twierdzić* ‘state’ or *mówić* ‘say’ (speech-act verbs, one-way communication verbs, in line with Jędrzejowski 2020, based on Karttunen 1977). The reportative function of *jakoby* is certainly its main function in modern Polish. Very similar to the alternation in German as described above, we assume that *jakoby*’s function as a marker for assertions also applies to verbs that are not communication verbs by default but acquire a communicative meaning when combined with *jakoby*. These verbs

include emotive and cognitive factives. Before the development of its reportative function, *jakoby* was only combinable with verbs of seeming like *wydawać się*, Jędrzejowski (2020), which indicates that it has a dynamic semantics and can fulfill functions not applicable to other, semantically strongly predefined complementizers like *żeby*. Our contribution aims to demonstrate that *jakoby* has further evolved by developing a purely reportative function and that a new class of verbs, which were not included in the previous research, can be proven to co-occur with this complementizer: cognitive and emotive factives. The fact that these verbs can take *jakoby*-clauses confirms the development of *jakoby* towards a semantically bleached marker of assertions or mediated assertions (see also Wiemer 2023). This corresponds to the function of German V2 subjunctive embedded clauses. Crucially, the *jakoby-że* alternation occurs with some communication verbs too, which proves that the function of *jakoby* as a marker of mediated assertions and as a blocker of factivity is not restricted to any particular class of verbs. In the following, we will present examples from the National Corpus of Polish (NKJP, Przepiórkowski et al. 2012) and the Walenty database (Przepiórkowski 2014). Afterward, we will discuss the role of proforms in creating the factive inference and present the analysis outline.

3.2 FACTIVE VERBS WITH AN INDICATIVE AND A SUBJUNCTIVE COMPLEMENTIZER

In this section, we show that the factivity alternation based on the indicative-subjunctive switch is also present in Polish and that the switch happens via complementizer alternation. Consider the following example of an emotive factive pair *dziwić jakoby* vs. *dziwić że*.⁶

- (35) Dziwi, jakoby członkowie koła naukowego mieli kłamać. (Polish)
wonders JAKOBY members circle scientific might lie
'The assumption (*jakoby*) the members of the scientific circle lied is surprising.'⁷
→ The members of the scientific circle lied (p)
↗ The speaker does not believe that p.
- (36) Dyrektor Jacek dziwi się, że przez tyle lat nikt nie zareagował
director Jacek wonders REFL ŻE through so.many years no one NEG reacted
na takie pozostałości po budowniczych. (Polish)
to such relics after builders
'Director Jacek is wondering that, for so many years, no one reacted to such relics after the builders.'
→ No one reacted to such relics after the builders.
Walenty: 116586: full NKJP corpus: Dziennik Zachodni, Polskapresse, 16.04.2007

A similar pattern can be observed with cognitive factives, here *zauważyć* 'realize'.

- (37) Wtedy usłyszałem, że detektyw sklepowy zauważył, jakoby wkładał coś
then heard.I ŻE security.guy shop.ADJ realized JAKOBY.I put something
do rękawa. Tam oczywiście nic nie było. (Polish)
into sleeve there of.course nothing NEG was
'And then I heard that the shop security guy realized *jakoby* I was putting something into my sleeve. Of course, nothing was there.'
→ I was putting something into my sleeve.
NKJP full corpus: Obrazili weterana, Dziennik Łódzki, Polskapresse, 30.05.2005
- (38) W ich błyskach zauważył, że sal jest tu więcej. (Polish)
in their flashes realized that rooms is here more
'In their flashes, he realized that there are more rooms here.'

⁶The translations and semantic judgements of corpus examples are our own.

⁷This is an impersonal use of 'wonder' (impersonal construction).

→ There are more rooms inside.

NKJP full corpus: Mariusz Cieřlik, *Śmieszni kochankowie*, W.A.B, 2004

The following subsection is devoted to the analogous factivity alternation with communication verbs in Polish.

3.3 NON-FACTIVE VERBS WITH AN INDICATIVE AND A SUBJUNCTIVE COMPLEMENTIZER

It can be observed that some communication verbs in Polish, for instance, *donieść*, *poinformować* ‘inform’, tend to have a factive meaning (via implicature or implication) when combined with a declarative complement, and that they always have a non-factive reportative meaning when combined with the subjunctive *jakoby*-clause.⁸ Compare the following examples for *donieść*. The first two examples contain a *jakoby*-clause, and the third example includes an indicative *że*-clause. Accordingly, in the two first-mentioned cases, an embedded proposition is a mediated assertion. In the third case, the embedded clause functions as a fact that is being introduced into the common ground. The naturally occurring corpus examples clearly confirm the presence of an assertivity-factivity contrast dependent on the use of the subjunctive vs. the declarative complementizer, respectively.

- (39) Przede wszystkim doniesiono mi, jakoby Reinhardt był całkowicie
 above all inform.IMPERSONAL I.DAT JAKOBY Reinhardt was fully
 reakcyjny [...]. (Polish)
 reactionary
 ‘First of all, I was informed jakoby Reinhardt was fully reactionary.’
 → There has been an utterance of the form “Reinhardt was fully reactionary”.
 ⇨ Reinhardt was fully reactionary (p).
 ⇨ The speaker distances himself from the truthfulness of p.
 Walenty: 44756: full NKJP corpus: Małgorzata Leyko, *Reżyser masowej wyobraźni*:
 Max Reinhardt i jego teatr dla pięciu tysięcy, Wydawnictwo UŁ, 2002

(39) entails that there has been an utterance of the form “Reinhardt was fully reactionary”. However, the sentence doesn’t entail that Reinhardt was, in fact, fully reactionary; it can be followed by a statement that explicitly denies p, without leading to a contradiction: *Doniesiono mi, jakoby [...], ale to nie była prawda* ‘but it wasn’t true’. Furthermore, as indicated in the inference list below the example, (39) carries an implicature of the speaker distancing himself from the truthfulness of p. A similar pattern can be found with ‘inform’ below. There is no truth-entailment, and there is a strong implicature that the sentence speaker maintains distance from the truthfulness of p (that they only report what has been said).

- (40) Z kolei tygodnik “Wprost” doniósł, jakoby agentem SB był proboszcz
 in turn weekly Wprost informed JAKOBY agent SB was parish.priest
 parafii archikatedralnej na Wawelu [...]. (Polish)
 parish archcathedral on Wawel
 ‘In turn, the weekly “Wprost” informed jakoby the parish priest of Wawel Arch-
 cathedral Parish was an SB agent.’

⁸At this point, a side note on aspectual verb formation in Polish is needed. Polish communication verbs usually build aspectual pairs, so we end up with (im)perfective variants of single lexemes. Zuchewicz (2020) showed that, in Slavic languages, perfectivity interacts with and often even parametrizes as truthfulness (where ‘truthfulness’ can be realized by different values, depending on the lexical verb semantics), including in the case of communication verbs. In this paper, we concentrate on perfective verbs of communication because they are, per se, more likely to be interpreted as true than their imperfective counterparts. Crucially, the assertivity-factivity contrast is obvious with the alternating complementizers. Due to space limitations, we do not discuss imperfective verbs of communication in this paper. The fact that verbs of communication appear in aspectual pairs in Polish makes them different from communication verbs in English or German.

→ There has been an utterance of the form “The parish priest of Wawel Archcathedral Parish was an SB agent”.

⇒ The parish priest of Wawel Archcathedral Parish was an SB agent (p).

↗ The speaker distances themselves from the truthfulness of p.

NKJP full corpus: W zgodzie z prawem i sumieniem, Dziennik Polski, Jagielonia, 25.02.2006

The same lexeme receives a factive reading when a clausal complement is introduced by the declarative complementizer, as shown in (41). This can be strengthened by the fact that the entailment remains valid under matrix verb negation.

- (41) W tej samej chwili słudzy donieśli mu, że dzik pustoszy winnicę,
in this same moment servants informed him że wild.pig ravages vineyard
więc Ankajos odstawił puchar i chwyciwszy oszczep wybiegł z domu.
so Ankajos put.aside cup and take.PTCP javelin ran.out from house
‘In that same moment, the servants informed him that a wild pig was ravaging a vineyard, so Ankajos put the cup aside, and after having taken the javelin, he ran out of the house.’ (Polish)

→ There has been an utterance of the form “A wild pig was ravaging a vineyard”.

→ A wild pig was ravaging a vineyard (p).

/↗ The speaker distances themselves from the truthfulness of p.

Walenty: 44731: full NKJP corpus: Między ustami a brzegiem pucharu, Gazeta Poznańska, Oficyna Wydawnicza Wielkopolski, 09.10.2004

A similar pattern occurs with *poinformować*. The first example contains the reportative non-factive *jakoby*-clause. In this example, the suspicion towards the truthfulness of p is being explicitly confirmed.

- (42) Bardzo przepraszam, że zabieram głos akurat w tym momencie, kiedy
very apologize że take voice exactly in this moment, when
wszyscy jesteśmy zmęczeni, [ale pan przewodniczący Komornicki poinformował
all are tired but man president Komornicki informed
Wysoką Izbę, jakoby cztery państwa, które są zaangażowane w tworzenie
High Chamber JAKOBY four countries which are engaged in creation
porozumienia “Zielone płuca Europy” wyraziły sprzeciw]. (Polish)
agreement Green Lungs Europe.of expressed objection
‘I sincerely apologize that I am raising my voice at this particular moment when we are all tired, but Mr. President Komornicki has informed the High Chamber *jakoby* four countries that are engaged in creating an agreement Green Lungs of Europe expressed their objection.’

Tak, trzy. Chcę sprostować tę informację.

‘Yes, three. I want to correct this information.’

⇒ Four countries expressed their objection.

Walenty: 404520: full NKJP corpus: Sprawozdanie stenograficzne z obrad Sejmu RP, Wydawnictwo Sejmowe, 1995

The following example contains a nominal propositional complement instead of a clause.

- (43) Poszkodowany katowiczanie bezzwłocznie poinformował [o kradzieży]
victim resident.of.Katowice immediately informed about theft
policję. (Polish)
police
‘The victim, a resident of Katowice, immediately informed the police about the theft.’

→ A resident of Katowice was a victim of theft.

NKJP full corpus: Areszt zamiast okupu, Dziennik Zachodni, Polska Presse,

21.02.2005

The above sentence with the complement *o kradzieży* implies that the theft has taken place. Crucially, the sentence with the truth-implicational interpretation can only be paraphrased by an indicative *that*-sentence and not by a subjunctive *jakoby*-clause, which confirms the role of *jakoby* in blocking factivity. *Poinformować* combined with a *that*-complement usually implies the truthfulness of the embedded proposition, as illustrated below. From (44) it clearly follows that the subject of an embedded clause pays higher bills than expected.

- (44) Poinformuj ją, że płacisz wyższe niż się spodziewałaś rachunki [...].
 inform her ŻE pay higher than REFL expected bills
 'Let her know about the fact that your bills are higher than expected.'
 → The bills are higher than expected. (Polish)
 Walenty: 404516: full NKJP corpus: internet example, Usenet, 17.10.2001

The purely reportative vs. factive meaning of the verb depending on the complementizer can also be found with the communication verb *potwierdzić* (confirm).

- (45) Agencja Kyodo oraz telewizja TBS donoszą, że [Yokoyama potwierdził, jakoby
 Agency Kyodo and television TBS inform ŻE Yokoyama confirmed JAKOBY
 guru podpisał porozumienie z prokuraturą [...]]. (Polish)
 guru signed agreement with prosecutor's-office
 'The agency Kyodo and the TBS television report that Yokoyama confirmed
jakoby the guru signed an agreement with the prosecution.'
 → The guru signed an agreement with the prosecution.
 Walenty: 245867: balanced NKJP subcorpus: Magda Kowalczyk, JAPONIA:
 Rozbieżności wokół zeznań Shoko Asahary, Gazeta Wyborcza, Agora S.A.,
 06.10.1995

Crucially, *donosić* above clearly implies that the information has been shared by the agency Kyodo and TBS television, which additionally confirms that *donosić* with a *that*-complement has a factive meaning. What does not function as a fact is the report about the guru having signed the agreement with the prosecution. Example (46) demonstrates that 'confirm' can introduce a proposition that holds true if that proposition is part of a declarative clause.

- (46) Ponownie potwierdziło się, że wiedza uczniów o przeszłości
 again confirmed. IMPERSONAL REFL ŻE knowledge pupils about past
 Śląska jest niska i okrojona do jednego okresu historycznego. (Polish)
 Silesia.of is poor and restricted to one period historical
 'It was confirmed again that the pupils' knowledge about Silesia's past is poor
 and restricted to one historical period.'
 → {As a result of a test / an investigation}
 The pupils' knowledge about Silesia's past is poor and restricted to one historical
 period.
 Walenty: 2375: balanced NKJP subcorpus: Jerzy Gorzelik, Tyta z maszkietami,
 czyli dlaczego Śląsk nie istnieje, Dziennik Zachodni, Polska Presse, 22.08.2009

At this point, a note on the production inference is needed. The production inference discussed above is absent with factive verbs that take a declarative complement, but it is present with factive verbs that take a *jakoby*-clause, which proves that reportativity is the main function of subjunctive subordinate clauses introduced by *jakoby*, and that the production inference is their inherent ingredient. The example below demonstrates that verbs like 'regret' are compatible with scenarios where the production inference is explicitly denied. Furthermore, as expected, they entail that the embedded proposition

holds true.

- (47) Marek *chyba* żałuje, że Ania z nim zerwała. (Polish)
 Marek probably regrets ŻE Ania with him broke.up
 ‘Marek probably regrets that Ania broke up with him.’ *However, he never said it aloud.*
 → Ania broke up with Marek.

In contrast, the example below could be uttered in the context where Marek is under a mistaken belief that Ania broke up with him (i.e., she didn’t break up with him, but for some reason he mistakenly concluded that she did). Then, Jan knows that Ania did not break up with Marek. He makes a report to their common friends about what Marek said to him before. In this report, the stress is on Marek’s belief state; at the same time, the use of the *jakoby*-clause makes it possible to indicate that the embedded proposition doesn’t hold true.⁹

- (48) Marek żałuje, *jakoby* Ania z nim zerwała. (Polish)
 Marek regrets JAKOBY Ania with him broke.up
 ‘Marek regrets *jakoby* Ania broke up with him.’
 ⇔ Ania broke up with Marek.
 → Marek has uttered a sentence like: ‘Ania broke up with me and I regret it.’

Example (49) also shows that the production inference is obligatory as soon as ‘regret’ takes a subjunctive clause.

- (49) Marek #*chyba* żałuje, *jakoby* Ania z nim zerwała. (Polish)
 Marek probably regrets JAKOBY Ania with him broke.up
 ‘Marek probably regrets *jakoby* Ania broke up with him.’

In sum, the combination of *chyba* and the *jakoby*-clause is ruled out due to the non-necessity of the production inference under the presence of *chyba*. This provides evidence that propositions within the scope of *jakoby* must have been uttered and that the production inference is implied. In this section, we have shown that the switch between the indicative and the subjunctive complementizer disambiguates between the factive and the reportative interpretation of some communication verbs in Polish, which shows that the role of *jakoby* in the factivity alternation is not restricted to cognitive and emotive factives.

4 PROFORMS AND FACTIVITY IN GERMAN AND POLISH

The fact that subjunctive clauses introduce reports is supported by their very restricted compatibility with correlates in both German and Polish. As a matter of fact, complementizer-introduced subordinated indicative clauses can always cooccur with a proform in both languages. This is because they are compatible with givenness; compare the following examples, starting from Polish. Crucially, this doesn’t mean that factivity and givenness are interchangeable concepts; it means that factivity is always compatible with givenness, and that assertivity and givenness hardly ever co-exist. Based on that, we assume that declarative clauses have a nouny origin, unlike subjunctive clauses.

- (50) Magda to zauważyła. (Polish)
 Magda it realized
 ‘Magda realized that.’
- (51) Magda to₁ zauważyła, [że Marek ukradł laptopa.]₁ (Polish)
 Magda it realized that Marek stole laptop
 ‘Magda realized that Marek stole the laptop.’

⁹We thank an anonymous reviewer for suggesting the modification of the scenario.

- (52) Magda *to*₁ zauważyła, #[jakoby Marek ukradł laptopa.]₁ (Polish)
 Magda it realized JAKOBY Marek stole laptop
 ‘Magda realized it *jakoby* Marek stole the laptop.’

German patterns with Polish; the subjunctive V2-clause, in contrast to the indicative clause with verb-final order, cannot cooccur with the proform (55); (see above, and again Schwabe 2013 or Hinterhölzl 2024). Furthermore, it is also not acceptable for verb-final RS to surface with the proform (56).

- (53) Hans bedauert es. (German)
 Hans regrets it
 ‘Hans regrets it.’
- (54) Hans hat es₁ bedauert, [dass er gelogen hat.]₁ (German)
 Hans has it regretted that he lie.PTCP has
 ‘Hans has regretted it that he lied.’
- (55) Hans hat es₁ bedauert, #[Jan habe gelogen.]₁ (German)
 Hans has it regretted Jan have.SBJV lie.PTCP
 ‘Hans has regretted it (that) Jan would have lied.’
- (56) Hans hat es₁ bedauert, #[dass Jan gelogen habe.]₁ (German)
 Hans has it regretted that Jan lie.PTCP have.SBJV
 ‘Hans has regretted it that Jan would have lied.’

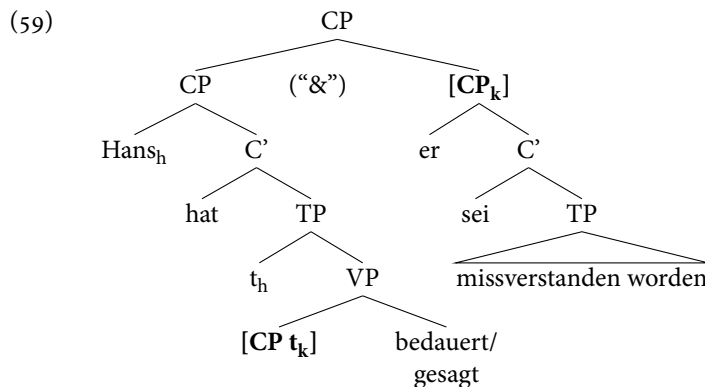
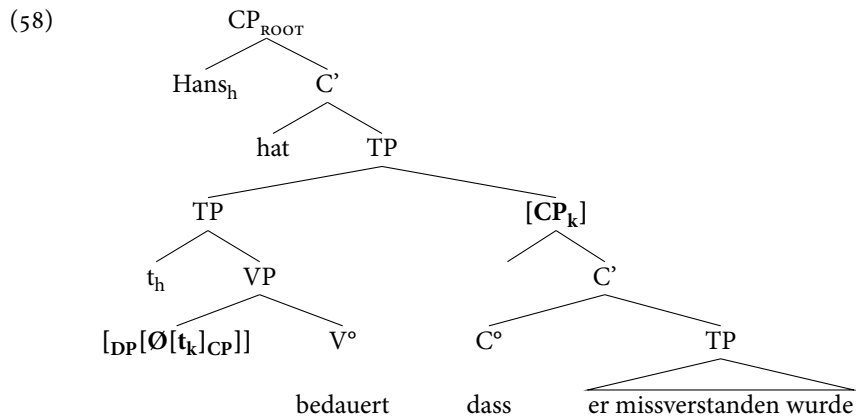
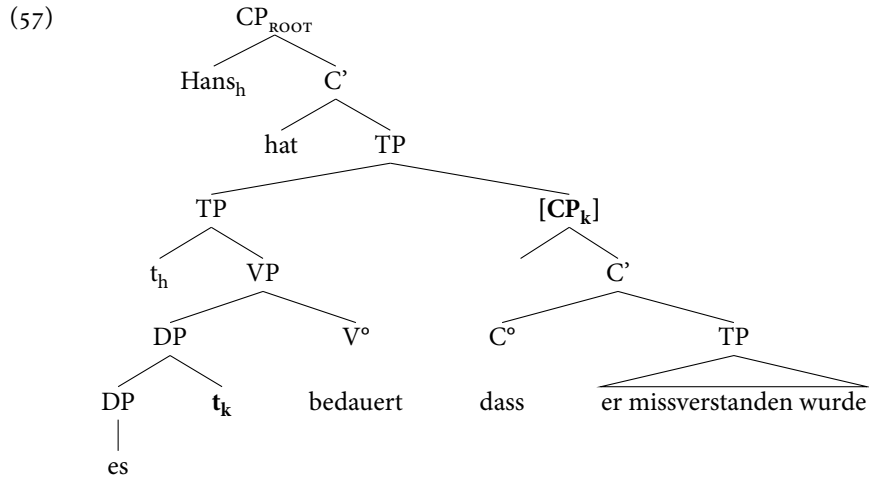
However, matters are complicated and deserve closer scrutiny. For the straightforward cases, the following section delivers a syntactic proposal to account for the morphological and semantico-pragmatic findings discussed so far.

5 ANALYSIS

In both languages, Polish and German, the factivity-assertivity alternation we have discussed in this paper is triggered by the subjunctive mood: through complementizer alternation in Polish and mood marking on the embedded verb in German. In German, a complementizer-less V2 structure is only possible with factive matrix verbs if the finite V2-verb carries subjunctive mood. We argue that the subjunctive mood prevents a propositional complement from being factive; instead, the meaning changes, and the embedded clause gets a hearsay interpretation (reportative use). What is more, we have demonstrated that in both Polish and German, subjunctive (verb-second) clauses cannot co-occur with a correlate (proform). This behavior is an indicator of the absence of givenness of the dependent clause in these complex sentences. Conversely, indicative *dass*-clauses can always be related to a proform, which indicates their nominal origin (e.g. the Kastner 2015 or Moulton 2020 among many others). The proposal to be put forward here is that cognitive and emotive factive verbs inherently possess a world-givenness feature that can be, but does not have to be, enriched by discourse givenness.

In this light, we propose that factive uses emerge when an embedded clause appears with a co-indexed proform. In such a case the object of the matrix verb is a determiner phrase (DP), with either *es* in German or *to* in Polish if the proform is explicit, or with an empty D, if the proform is not explicit; i.e., in both cases the subordinate proposition is embedded within a nominal structure – inside a DP. In both cases, we treat the associated clause in its overt position as an adjunct to the matrix TP due to its behavior with the correlate. That means – as can be read off from the trees in (57) and (58) – that the subordinated clause ends up in the syntactic scope of the matrix verb, thus below root clause C°. In a very different way, dependent subjunctive V2 clauses and *jakoby*-clauses are base-generated as CP-sisters of the matrix verb, and then obligatorily extraposed and shifted to a position that assimilates them to coordinated clauses, i.e., they are taken to be clausal, not nominal. Being maximal projections of verbal heads makes them genuine

CPs. As such, they can attach very high with respect to the matrix clause with which they associate. If they are attached as high as possible, a quasi-coordinative structure results. This structural option enables the observable features of illocutionary independence (“Speech acts do not embed”: Green 2000; or Gärtner 2002 again). Taking all this together, we propose the structural representations of a factive realization in German with an overt proform in (57), without an overt proform in (58), and a non-factive reportative variant as in (59). Example sentences are: *Hans hat (es) bedauert, dass er missverstanden wurde* (Hans regretted (it) that he was misunderstood.) / *Hans hat bedauert/gesagt, er sei missverstanden worden* (Hans regretted/said that he was misunderstood). In Polish, (the embedded) C° would be occupied by *że* (in the first two cases) and by *jakoby* (in the last case), leading to the “DP-ness” (nouniness) vs. “CP-ness” (clauseness) of the object argument similarly.



6 CONCLUSION

The present article examines a specific instance of the factivity-assertivity alternation in German and Polish. It is demonstrated that, in both languages, verbal predicates which are typically considered to be inherently factive can be reinterpreted as communication verbs when placed in an appropriate syntactic environment. Consistent with ongoing discussions in the literature, it is suggested that factivity is not an inherent property of a predicate but is instead a result of structural configurations. In German and Polish, factive verbs combined with a corresponding declarative indicative *that*-clause produce a factive interpretation. However, these verbs lose their factive meaning when a reportative subjunctive is present within the embedded clause. In German, the reportative subjunctive is marked on the embedded finite verb, systematically allowing for a reportative-assertive V2 word order within the subordinate clause. In Polish, the alternation is triggered by the subjunctive reportative complementizer *jakoby*. We propose that the object originates inside a DP in the case of factive variants and as a purely clausal constituent (CP) in the case of reportative-assertive variants. The Polish data are explained and covered likewise by different complementizers (indicative and subjunctive).

ABBREVIATIONS

ADJ	adjective	PST	past
DAT	dative	PTCP	participle
IND	indicative	REFL	reflexive
NEG	negation	SBJV	subjunctive
NMLZ	nominalizer/nominalization	TOP	topic
NOM	nominative		

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