

WH-SCOPE MARKING IN POLISH*

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ABSTRACT

This paper investigates the syntactic and semantic properties of *wh*-scope marking questions in Polish. On the basis of the comparison between the Polish and German data, I propose an analysis accounting for a number of peculiar properties of the Polish construction which are parallel to characteristic properties of integrated parenthetical structures. The present analysis supports an idea advocated in Dayal (2000: 157, 190), according to which languages universally have scope marking, but may exhibit variation in its syntactic realisation, i.e. the presence or absence of subordination.

1. Introduction

A number of languages form *wh*-questions, like that in (1), in which one or more *wh*-phrases located in an embedded clause have scope in a higher clause. The scope is indicated by the presence of a distinct *wh*-word in the higher clause, which typically takes the form of ‘what’ in a language, and appears to have no other semantic function. Hence the term partial *wh*-movement is used, since the meaningful *wh*-phrase moves at surface structure only to an intermediate position on its way to the [Spec,CP] of the matrix clause.

- (1) Was_i glaubst du wann_i sie t_i gekommen ist]? (German)
 [CP
 what think you when she come is
 ‘When do you think that she came?’

In this study I will be concerned with the syntactic and semantic properties of the *wh*-scope marking construction in Polish. I will discuss the properties of the con-

* I am grateful to the PLM 2003 audience for valuable comments and suggestions which have improved the final shape of this paper. All errors remain my responsibility.

struction and show that it considerably differs from the German structure in (1). Following Stepanov (2000: 11-13, 2001: 173-175), I will evaluate the Polish data against the Direct Dependency Approach (DDA) and Indirect Dependency Approach (IDA), two competing approaches to *wh*-scope marking. I will argue that it is the latter that provides an adequate analysis of the Polish data. Having discussed the properties, I will propose an analysis of Polish *wh*-scope marking questions as integrated parenthetical structures. The analysis will indicate that the Polish construction falls into the class of *wh*-scope marking questions, which itself is subject to cross-linguistic variation.

2. Properties

Polish does not share all properties with well known *wh*-scope marking languages, like e.g. German. First of all, Polish does not employ the *wh*-phrase *co* 'what' but *jak* 'how' as the *wh*-scope marker. Secondly, Polish *wh*-scope marking questions block successive-cyclic long-distance *wh*-movement. The relevant data are presented in (2).

- (2a) Jak myślisz, kiedy; ona przyjdzie t_i?
 how think when she will-come
- (2b) *Kiedy; myślisz, że ona przyjdzie t_i?
 when think that she will-come
 (a-b) 'When do you think that she will come?'

As in Polish long-distance *wh*-extraction is confined to infinitival and subjunctive complement (Willim 1989: 112, Witkoś 1995: 225-226, among others), the *what...wh*-construction, or rather *jak...wh* construction seems to be the major strategy of questioning out of embedded clauses. Yet, it does not remain unconstrained. For instance only verbs of thinking like *myśleć* 'to think', *sądzić* 'to suppose', *uważać* 'to consider' or *wydawać się* 'to seem' can license *wh*-scope marking. This is the reason for the limited occurrence of the construction as compared to German and Hindi. If *think* in (3) is replaced with *understand* or *know*, the sentence becomes ungrammatical. In contrast, Hindi and Hungarian may employ any verb, while German does not allow factive and certain volitional predicates (Fanselow 1999: 24).

- (3a) Jak myślisz, kogo; Janek kocha t_i?
 how think who- Janek- loves
 Acc. Nom.M.
 'Who do you think that John loves?'

- (3b) *Jak rozumiesz / kogo; Janek kocha t_i?
 wiesz,
 how understand / who- Janek- loves
 know Acc. Nom.M.

In Polish questions like (4) any *wh*-phrase can be associated with the *wh*-scope marker. The construction is also allowed with embedded yes/no-questions.

- (4) Jak myślisz gdzie/dlaczego/kiedy/jak/czy Janek pracuje?
 how think where/why/when/how/whether Janek- works
 Nom.M.
 'Where/why/when/how/*whether do you think that John works?'

The last difference concerns iterating the clause containing the *wh*-scope marker, which results in an unacceptable structure, like the one in (5).

- (5) *Jak myślisz, jak Janek sądzi, jak Tomek
 how think how Janek-Nom.M. supposes how Tomek-Nom.M.
 myśli, kogo Maria kocha?
 thinks whom Maria-Nom.F. loves
 'Who do you believe that John supposes that Tom thinks that Mary loves?'

Other properties of Polish *wh*-scope marking pattern with well-studied *wh*-scope marking languages like German. As (6) shows, any number of embedded *wh*-phrases may be scopally associated with the *wh*-scope marker.

- (6) Jak myślisz, kto; kogo; t_i przeprosi t_j pierwszy?
 how think who-Nom. who-Acc. will-apologise first
 'Who do you think will first apologise to whom?'

The scope marker must be present in every clause higher than the clause which contains the scoped *wh*-phrase. If the *wh*-scope marker is separated from the 'true' *wh*-phrase by a clause, the structure is incorrect, as in (7).

- (7) *Jak sądzisz, że Jan myśli, z kim; Maria rozmawiała t_i?
 how suppose that Jan-Nom. thinks with who-Instr. Maria-Nom talked
 'Who do you believe John thinks Mary talked to?'

As for the complement, it must have a [+wh]-feature. Otherwise, as (8) illustrates, the sentence is not acceptable. The predicate in the first clause, on the other hand, must not select a *wh*-complement. This is shown in (9), which is degraded due to the wrong choice of the predicate in the matrix clause.

- (8) *Jak myślisz, że Maria rozmawiała z Janem?
 how think that Maria-Nom.F. talked with Jan-Instr.
- (9) *Jak się pytałeś/zastanawiałeś, kto; t_i przyjdzie?
 how Refl. asked/wondered who-Nom. will-come

Finally, *wh*-scope marking across sentential negation is ungrammatical. This is illustrated in (10).

- (10) *Jak nie myślisz, kto; t_i kocha Marię?
 how not think who-Nom. loves Maria-acc.
 'Who don't you think that loves Mary?'

As far as the properties of the structure under discussion are concerned, Polish differs from well known *wh*-scope marking languages. This discrepancy seems to be consequential since it suggests a need for a different analysis of the Polish facts. A more extensive research on the construction is necessary, since Polish (and Slavic) *wh*-scope marking questions may provide valuable evidence for one of the competing approaches – the Direct Dependency Approach (van Riemsdijk 1982, McDaniel 1989) and the Indirect Dependency Approach (Dayal 1994). The Direct Dependency Approach (DDA) has been often accepted as the common approach to *wh*-scope marking. Some languages, like for instance Hindi, provide evidence against this wide acceptance. As for Slavic *wh*-scope marking, Stepanov (2000: 11-13, 2001: 173-175) argues that these data seem to favour the Indirect Dependency Approach (IDA). In order to check whether the IDA fares with regard to Polish data, I will now look into the facts about the nature of the scope marker in Polish.

3. The nature of the scope marker in Polish

According to the DDA, introduced in van Riemsdijk (1982) and further defended in McDaniel (1989), the *wh*-scope marker is semantically empty and it only has a syntactic function. It is base generated in SpecCP and directly coindexed with the *wh*-phrase in the lower clause. Being semantically inert, it behaves like an expletive, with the subsequent expletive replacement at LF. In case of partial *wh*-movement, the *wh*-scope marker is replaced by the *wh*-phrase whose scope it marks. It follows that the highest scope marker is a *wh*-expletive, which has to be replaced at LF. A scope marker may bind more than one *wh*-phrase. They all move to COMP at LF. The direct dependency relation is therefore implemented as LF-movement.

Stepanov (2000: 11-13, 2001: 173-175) points out three arguments against adopting the DDA for Slavic. The first one comes from a version of the *wh*-scope marking interrogative available in Slavic and in other *wh*-scope marking languages

like Hindi. As illustrated in (11), the second clause of the construction in Polish, Russian (Stepanov 2001: 173) and Hindi (Dayal 1994: 139, fn. 2) may be a yes/no question.

- (11a) Jak ci się wydaje, czy Janek przyjdzie?
 how you-Dat. Refl. seem whether Janek-Nom.M. will-come
 'What do you think, will John come?'
- (11b) Kak vy sčitaete, budet li zavtra dožd'?'
 how you think will Q tomorrow rain
 'What do you think, will it rain tomorrow?'
- (11c) Tum kyaa socte ho ki meri-ne haans-se baat kiyaa yaa nahiiN?
 you what think that Meri Hans-with talked or not
 'What do you think about whether Maria talked with Hans?'

In the structures in (11) there is no element that could raise and replace the scope marker at LF. Beck and Berman (2000: 41-42) argue against raising of *whether* in the *wh*-scope marking construction as this transformation renders wrong interpretation of embedded *whether*-questions. Beck and Berman (2000: 41-42) point out that (11c) would have roughly the LF representation as in (12a), and would be interpreted as a yes/no question with the translation as in (12b).

- (12a) [_{CP} yaa nahiiN [_C tum kyaa socte ho ki meri-ne haans-se baat kiya]]
 (12b) [WHETHER] ([you think that Mary talked to Hans]) =
 $\lambda q \lambda p [p=q \vee p=\text{non } q] (\wedge [\text{think} (\text{you}, \wedge [\text{talk-to} (\text{m}, \text{h}))]) =$
 $\lambda p [p= \wedge [\text{think} (\text{you}, \wedge [\text{talk-to} (\text{m}, \text{h}))]] \vee p= \wedge [\neg \text{think} (\text{you}, \wedge [\text{talk-to} (\text{m}, \text{h}))]]]$

The interpretation assigned to (11c) by the DDA amounts to the question, 'Do you think that Mary talked to Hans?', which can have two answers, either 'I think Mary talked to Hans' or 'I don't think Mary talked to Hans'. However, these are not appropriate answers to (11c), which should be either 'I think Mary talked to Hans' or 'I think Mary didn't talk to Hans'. This line of reasoning also applies to Polish, where after the raising of *whether*, the denotation of (11a) would be schematically represented as in (13).

- (13) [WHETHER] ([you think that John will come])

As Beck and Berman (2000: 41-42) note, under the DDA the raising of *whether* in (11a) renders the wrong interpretation, as in (14), whereas (11a) should render the answers in (15).

- (14a) Wydaje mi się, że Janek przyjdzie.
Seem I-Dat. Refl. that Janek-Nom.M. will-come
'I think that John will come.'
- (14b) Nie wydaje mi się, że Janek przyjdzie.
not seem I-Dat. Refl. that Janek-Nom.M. will-come
'I don't think that John will come.'
- (15a) Wydaje mi się, że Janek przyjdzie.
(15b) Wydaje mi się, że Janek nie przyjdzie.
seem I-Dat. Refl. that Janek-Nom.M. not will-come
'I think that John will not come.'

Consequently, the data above indicate that the DDA analysis does not seem to offer a correct way of treating the *wh*-scope marking facts in languages like Hindi, Polish and Russian.

Another argument against adopting the DDA for Slavic concerns the issue of LF raising of the 'true' *wh*-phrase (Stepanov 2000: 11, 2001: 174). If one adopts the minimalist framework of Chomsky (1995) which assumes feature-driven movement, then the LF movement of a *wh*-phrase to the scope position is not motivated at all. Moreover, it is rather unlikely that in sentences like (16a) the *wh*-phrase moves at LF, since then it would result in a long-distance question. Long-distance questions are generally ungrammatical in Polish, especially when the *wh*-word moves out of the indicative clause, as in (16b).

- (16a) Jak myślisz, kiedy_i Janek przyjdzie t_i?
how think when Janek-Nom.M. will-come
- (16b) *Kiedy_i myślisz, że Janek przyjdzie t_i?
when think that Janek will-come
'When do you think that John will come?'

Considering the degraded status of (16b), it is rather implausible that in sentences like (16a) the 'true' *wh*-phrase moves at LF to the scope position.

Finally, as Stepanov (2000: 12, 2001: 175) notes, the DDA does not explicitly account for the raising of the 'true' *wh*-phrase to a [-*wh*] Comp. Again, this problem arises on the economy grounds of the Minimalist Program of Chomsky (1995), according to which movement is not allowed unless necessary. In other words, there is no motivation for *kiedy* to move to a [-*wh*] position in (16a).

The arguments above provide the basis for the claim that the DDA fails to account for *wh*-scope marking in languages like Polish. The right approach seems to be the IDA of Dayal (1994), according to which *jak* is not an expletive, but a true

wh-word which is restricted by an extraposed interrogative clause. Dayal provides the following analysis for a Hindi structure as in (17).

- (17) Jaun kyaa_i soctaa hai [_{CP} ki meri kis-se baat karegii]_i?
Jaun what thinking is that Meri who-ins talk do
'Who does John think Mary will talk to?'

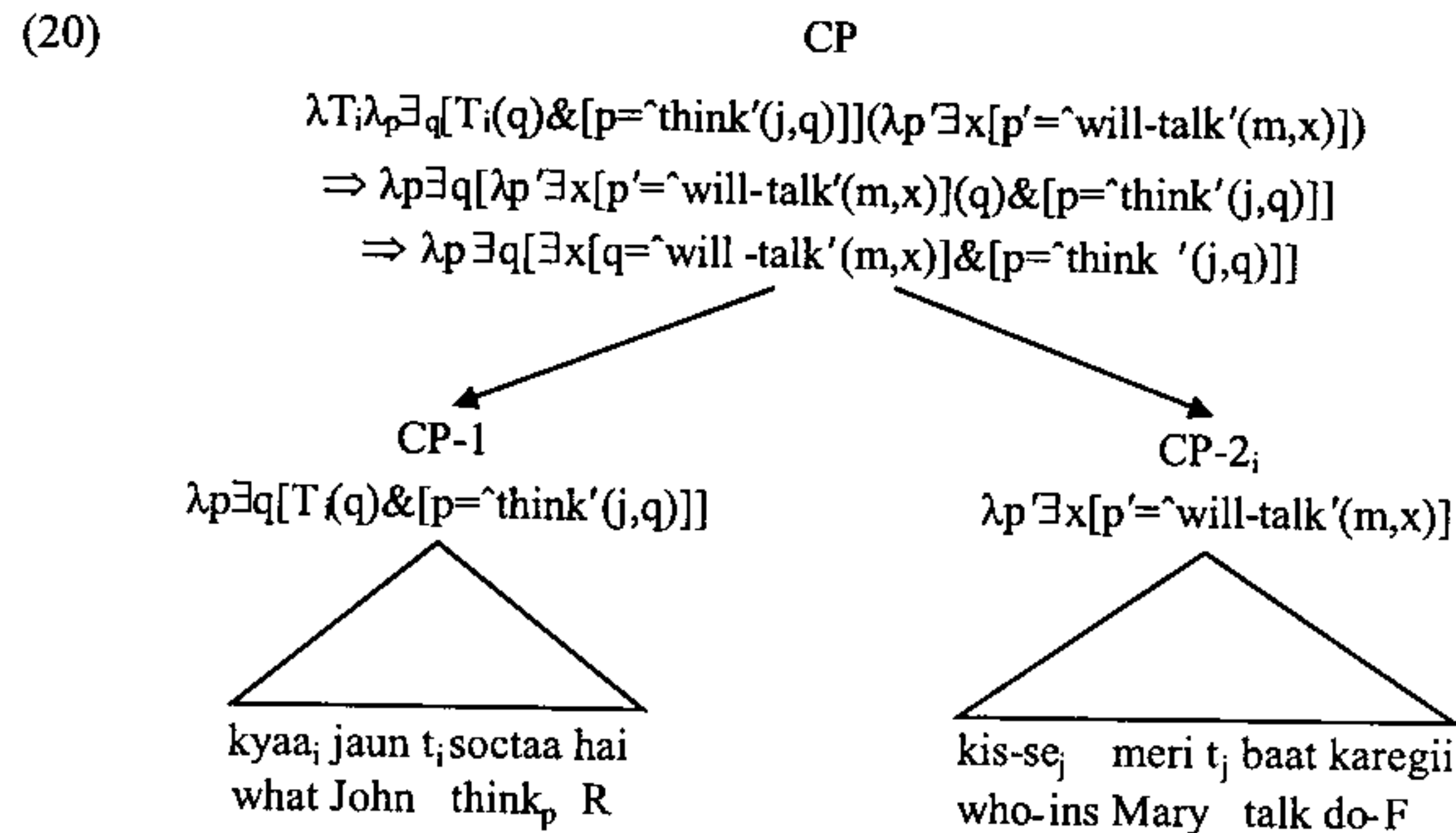
Under the IDA, the meaning of (17) can be roughly paraphrased as (18), and the LF representation is assumed as in (19).

- (18) "Which property of proposition 'Who will Mary talk to' does John believe?"
- (19) LF: kyaa_i jaun t_i soctaa hai [_{CP} kis-se_j meri t_j baat karegii]_i

Under the IDA, a question is a set of propositions and sets may be regarded as properties, here a property of propositions. Hence a question may serve as the restriction of an existential quantifier over propositions. Dayal (2000: 161) claims that each clause in a *wh*-scope marking construction forms a separate question, or a local *wh*-dependency. *Kyaa* is a regular *wh*-phrase used to question over propositions. The second clause, right-adjoined to the matrix clause, is a question over individuals. The *wh*-scope marker¹ and the second clause are different constituents at every point of the syntactic derivation, indirectly related to each other by means of coindexation. Dayal (2000: 162) defines the semantics of coindexation between the matrix preverbal position and the adjoined position in the following way: the matrix question should only let in those propositions that also belong in the denotation of the complement. As all natural language quantification is overtly or covertly restricted, this can be achieved by treating the complement as the restrictor of the matrix *wh*. The scope marker quantifies over a propositional variable restricted by T_i (a mnemonic for Topic). This generates a set of propositions as the meaning of the matrix question. The complement denotes a set of propositions as well, and must be filled into the slot occupied by T_i. Accordingly, we have two expressions denoting sets of propositions at the top CP node. One of these has to be raised for the functional application to go through. In quantificational structures, syntactic coindexation is interpreted as an instruction for lambda abstraction. T_i is abstracted over and the ad-

¹ A terminological remark is needed here. The fact that Dayal calls *kyaa* a scope marker may seem confusing. As von Stechow (2000: 461) notes, *kyaa* does not have the properties of an expletive or a scope marker. It has a full semantics and it behaves like the *wh*-determiner *which*. For this reason von Stechow (2000: 461) suggests that the term *scope marker* should not be applied to *kyaa*. It should be rather called a *wh*-determiner. In the present discussion I refer to the first *wh*-phrase as the *wh*-scope marker simply as a mnemonic term.

joined clause fed in as argument. The semantics for a Hindi scope marking structure like (17) is presented in (20).



As Stepanov (2000: 11-13, 2001: 173-175) observes, the IDA is superior to the DDA in the case of Slavic² since it straightforwardly accounts for the problems enumerated at the beginning of this section. Since the IDA treats a *wh*-scope marking question as involving two syntactic dependencies concerning interrogation, any *wh*-phrase can occur in the lower clause. The lower clause can be a multiple question or a yes/no question due to the fact that it is a regular interrogative structure itself. Moreover, there is no problem with the disputable LF movement of the 'true' *wh*-phrase since under the IDA no such movement takes place. Finally, as the second clause of the construction is by itself a question, it has the interrogative Q-feature in its Comp. Thus there is no problem with accounting for the fronting of the *wh*-phrase in the lower clause: it is feature-driven, as the Minimalist Program pre-

² In fact Stepanov (2000: 14-34, 2001: 163-204) assumes the semantics of the IDA which he combines with the 'sentential expletive' syntax. Investigating *wh*-scope marking questions in Polish and Russian, Stepanov proposes an analysis according to which the *wh*-scope marker forms a constituent with the 'true' *wh*-phrase, i.e. the *wh*-scope marker takes the second clause as a complement. Stepanov's line of reasoning is based on the assumption that finite complements are NP-shells in Polish and Russian. Accordingly, he proposes the NP-shell structure for the *wh*-scope marking construction. Following Mahajan (1990), Stepanov argues that the *wh*-scope marker forms a constituent with the embedded clause at some point in the structure building. The *wh*-scope marker is a head that takes the finite clause as a complement. It moves to the matrix Comp, yielding a *wh*-scope marking question, as in (i).

(i) [_{CP} kak vy dumaete [_{XP} t_{kak} [kogo Ivan ljubit t_{kogo}]]]
how you think who-acc. Ivan-Nom.M. loves
'Who do you think that John loves?'

For a detailed analysis see Stepanov (2001: 163-204).

dicts (Chomsky 1995: 280). Having considered all these facts, I conclude that the IDA provides an adequate account of Polish *wh*-scope marking.

The nature of Slavic *wh*-scope markers certainly needs more comprehensive research, nonetheless at this point Polish data seem to lend support to the IDA. Assuming the IDA for Polish I do not reject the validity of the DDA for languages like German. The DDA cannot handle some facts about Hindi, Polish and Russian scope marking like for instance the possibility of *whether*-questions. The IDA, on the other hand, fails to explain the impossibility of *whether*-questions in German *wh*-scope marking construction (Berg and Berman 2000: 41). Such evidence leads to the conclusion that *wh*-scope marking in languages like German and Hindi or Polish may be syntactically (and semantically) distinct constructions. Searching for a unified analysis of all languages may thus turn out to be implausible or result in an empirically inadequate approach.³

4. Analysis

The type of structure which van Riemsdijk (1982) termed *wh*-scope marking question is an alternative to successive-cyclic long-distance *wh*-movement, since both constructions yield the same answer. In Polish long-distance *wh*-extraction is generally ungrammatical. However, the *jak...wh*-construction in (21a) elicits the same kind of answer, presented in (21b), which would be given to an English long-distance question, as in (22).

(21a) Jak myślisz, kto dostanie nagrodę?
how think who-Nom. will-get award-Acc.
'Who do you think will get the award?'

(21b) Myślę, że Janek dostanie nagrodę.
think that Janek-Nom.M. will-get award
'I think that John will get the award.'

(22a) Who do you think will get the award?

(22b) I think that John will get the award.

The question in (21a) elicits an answer that involves supplying the value for the *wh*-phrase *kto* in the embedded clause, not *jak*. This suggests that *jak* only marks the

³ Dayal (2000: 173) strongly supports the idea of a common account of scope marking structures in different languages. She argues that different syntactic options exist in natural languages for scope marking constructions, yet the semantic relation remains the same, i.e. scope marking structures always involve indirect dependencies. For detailed argumentation, see Dayal (2000).

scope of *kto* in the overt syntax, just like *was* marks the scope of *wen* in the following German structure.

- (23) Was denkst du, wen sie gesehen hat?
 what think you who-Acc. she seen has
 'Who do you think that she has seen?'

The similarity between the Polish and German construction is only superficial. As I have pointed out in section 2, there are four significant differences between Polish and German with respect to the construction in question: Polish employs the *wh*-phrase *jak* 'how' not *co* 'what' as the *wh*-scope marker; there may be only one *jak* in a sentence – no repetition is allowed; next, only verbs of thinking license the construction, which, in contrast to German, is allowed with embedded yes/no questions. Taking this discrepancy as a starting point, I would like to argue that the two constructions have different syntax.

According to Willim (1989: 113), in the question like (21a), the phrase *jak myślisz* functions as an adjunct of attitude (viewpoint adjunct), which may be paraphrased by 'in your opinion/according to you'. This assumption is supported by the fact, already illustrated in (3), that this phrase may only involve a verb of thinking. This clearly suggests that the questioner asks about the addressee's opinion. If we replace *jak* with *co*, as in (24), the structure becomes ungrammatical.

- (24) Jak/*Co myślisz, kto dostanie nagrodę?
 how/what think who-Nom. will-get award
 'Who do you think will get the award?'

Furthermore, in contrast to German (25a)⁴, the Polish construction, like the one in (25b), cannot be used to elicit information about the opinion of a person other than the addressee of the question.⁵ Thus, the optimal structure is used with a second person subject.

- (25a) Was hat Otto gesagt, wen er liebt?
 what has Otto-Nom.M. said who-Acc. he loves
 'Whom did Otto say that he loved?'
- (25b) ?*Jak Janek myślał, kogo Maria kocha?
 how Janek-Nom.M. thought who-Acc. Maria-Nom.F. loves
 'Whom did John think that Mary loved?'

⁴ Examples (25a), (26a) and (27a) are due to D'Avis (2000: 131, 138).

⁵ According to Willim (1989: 113) the *jak...wh*-construction can only be used with a second person subject. Speakers, however, may differ on the strength of this restriction. See Stepanov (2000: 165) for less radical judgments.

Again in contrast to German (26a), the *jak...wh*-construction in (26b) and (26c) cannot be used in an embedded sentence.

- (26a) Ich möchte wissen, was Otto gesagt, wen er liebt.
 I want know what Otto-Nom.M. said who-Acc. he loves
 'I want to know whom Otto has said that he loves'
- (26b) *Chcę wiedzieć, jak myślisz, kogo Janek kocha.
 want know how think who-Acc. Janek-Nom.M. loves
 'I want to know who you think that John loves.'
- (26c) *Zastanawiam się, jak myślisz, kogo Janek kocha.
 wonder Refl. how think who-Acc. Janek-Nom.M. loves
 'I'm wondering who you think that John loves.'

This entails another property, already pointed out in the previous section: in contrast to German, the Polish construction does not allow a sequence of *jak*-phrases. This is illustrated in (27a) for German, and (27b) for Polish.

- (27a) Was glaubst du, was Otto meint, was Karl denkt,
 What believe you what Otto- reckons what Karl- thinks
 Nom.M. Nom.M.
- wen Friedrich getroffen hat?
 who-Acc. Friedrich- met has
 Nom.M.
- 'Who do you believe that Otto thinks that Karl thinks that Friedrich has met?'

- (27b) *Jak myślisz, jak Janek sądzi, jak Karol myśli,
 how think how Janek-Nom.M. supposes how Karol-Nom.M. thinks
 kogo Maria spotkała?
 whom Maria-Nom.F. met
- 'Who do you think that John supposes that Charles thinks that Mary has met?'

The facts above suggest that the *jak...wh*-construction is rather an instance of biclausal entity⁶, like the English (28), than an instance of *wh*-scope marking construction.

- (28) What do you think? Where did Mary go?

⁶ Fanselow (1999: 36, fn. 4) suggests this solution as an answer to the question why Polish does not allow the construction under discussion in an embedded sentence.

Such an assumption would entail that no syntactic chain formation or binding of any kind, hence no direct dependency, between the *wh*-phrases in the two clauses is conceivable. What is correct about this line of reasoning is the fact that the interpretation of the *wh*-expressions in the *jak...wh*-construction does not involve direct dependency. The construction itself, however, does not instantiate a sequence of questions. Before I draw the final conclusion, let me once again have a closer look at the pragmatic, semantic and distributional properties of the structure under discussion.

The *jak...wh*-construction, as in (29a), contrasts with a sequence of questions in (30a), which encode separate requests for information. The possible answers to (29a), exemplified in (29b), give values only for the *wh*-word in the second clause, while the answer to (30a) in (30b) gives value for *wh*-phrases of both clauses.

- (29a) Jak myślisz, kogo Maria kocha?
 how think who-Acc. Maria-Nom.F. loves
 'Who do you think that Mary loves?'
- (29b) Myślę, że Maria kocha Janka/Marka/Tomka.
 think that Maria-Nom.F. loves Janka-Acc.M/Marka-Acc.M/Tomka-Acc.M
 'I think that Mary loves John/Mark/Tom.'
- (30a) Kto dzwonił? Co chciał?
 who phoned what wanted
 'Who phoned? ' What did he want?'
- (30b) Janek dzwonił. Chciał pożyczyć książkę.
 Janek-Nom.M. phoned wanted-M. borrow book
 'John phoned. He wanted to borrow a book.'

As (29) shows, the *jak*-clause is informationally less prominent than the related *wh*-clause. What *jak* asks for is elucidated by the set of possible answers to the second question. *Jak* does not have its own communicative force, and it seems to almost have lost its propositional character. Its aim is to put the *wh*-clause proposition into the attitudinal perspective of the *jak*-clause subject. Since *jak* seems to be semantically inert, and the *wh*-phrase in the second clause seems to take scope outside its syntactic domain, I assume that the *jak...wh*-construction is an example of scope marking structure. The characteristics discussed so far indicate that the *jak*-clause and the related *wh*-clause are not equally autonomous. Additional support comes from intonational facts: it is natural to realize the *jak...wh*-construction with one intonational contour, without explicit comma intonation. Furthermore, the main accent of the whole clause does not fall on the *jak*-clause, which suggests that the *jak*-clause is integrated into the related *wh*-clause. This conclusion is supported by the distributional properties: the *jak*-clause may not be syntactically complex (only one *jak*-clause is allowed), it does not allow different predicates (only the verbs of think-

ing), and it is restricted to the second person subjects. All these facts are once again illustrated in (31), respectively.

- (31a) *Jak myślisz, jak Janek myśli, kogo Maria kocha?
 how think how Janek- thinks who-Acc. Maria- loves
 Nom.M. Nom.F.
 'Who do you think that John thinks that Mary loves?'
- (31b) *Jak wiesz, kogo Maria kocha?
 how know who-Acc. Maria-Nom.F. loves
 'Who do you know that Mary loves?'
- (31c) ?*Jak Janek myśli, kogo Maria kocha?
 how Janek-Nom.M. thinks who-Acc. Maria-Nom.F. loves
 'Who does John think that Mary loves?'

The evidence presented above shows that the *jak...wh*-construction shares properties with the parenthetical construction in German, as illustrated in (32a), not with the *was...w*-construction, as in (32b).⁷

- (32a) Was glaubst du, wohin ist er gegangen?
 what believe you where-to is he gone
 'Where do you believe that he went?'
- (32b) Was glaubst du, wohin er gegangen ist?

Analysing the German data, Reis (2000: 373-384) demonstrates that *wh*-scope marking constructions share properties with long-distance *wh*-movement constructions and with *was*-parenthetical structures. According to her, the former seem to require a direct dependency, while the latter an indirect dependency analysis. As far as (32a) is concerned, the verb-second effect in the second clause clearly indicates the clause's independence. Reis (2000: 372) argues that the CP2 is a main clause structure, and the *was*-parenthetical is inserted at the level at which discourse relations are computed. Since *was*-clauses are always in an adjacency relation to the host clause (CP2), Reis argues that the anaphoric relation between *was* and the host clause may be induced by pragmatic means, like coherence requirements on well-formed discourse or the Gricean maxim of relevance, or by formal marking by coindexing. The latter, however, as Reis points out, is not necessary. The parenthetical clause boundaries are not prosodically marked.

⁷ Reis (2000: 378-384) shows that a great number of peculiar properties of *was...w*-constructions are parallel to characteristic properties of integrated parenthetical constructions. She proposes that historically subordinated scope marking is a grammaticalization of the parenthetical construction, which involved a shift from two independent clauses in juxtaposition to subordination. She puts forward an unorthodox hypothesis that the analysis of *was...w*-construction has to become more 'parenthetical'.

The *jak...wh*-construction shares a number of properties with *was*-parenthetical structure, as discussed by Reis (2000: 364-372). First of all, they are similar in their questioning function, which is asking for the values of X which Y believes will make the proposition 'p[x]' true. Next similarity is the semantic relation between *was/jak* and the related *wh*-clause – it is the latter clause that clarifies what *was/jak* asks for. The two constructions share pragmatic effects: the *was/jak*-clause is informationally less prominent than the related *wh*-clause, with which it seems to be prosodically and interpretationally integrated. All these effects are typical for constructions containing integrated parentheticals. The major formal properties of parenthetical *was*-construction are listed in (33) (Reis 2000: 364, 367).

- (33) Major formal properties of integrated parenthetical *was*-constructions:
- (a) *was*-parentheticals are hosted by bona fide main clauses;
 - (b) they occur in clause-initial, clause-medial, and clause-final position (although initial position is by far the best);
 - (c) they occur with *wh*-interrogative clauses as well as with *yes-no*-interrogative clauses;
 - (d) their prosodic autonomy vis-à-vis the host clause is much reduced, which manifests itself in three correlating properties:
 - (i) there is no really explicit comma intonation;
 - (ii) they are integrated into the Focus-Background-Structure of their host clause;
 - (iii) they may never contain the main accent of the whole clause.
 - (e) they include only verbs of saying, thinking, believing;
 - (f) they are not syntactically complex;
 - (g) first person subject is not allowed;
 - (h) the main clause may not include either specific material or stress/focus-related material.

The *jak...wh*-construction does not exhibit only property (33b). In contrast to German, as illustrated in (34), the best position for the *jak*-clause is the initial one, as demonstrated in (35).

- (34a) Wohin ist er gegangen, was glaubst du?
 where-to is he gone what believe you
 (34b) Wohin was glaubst du, ist er gegangen?
 (34c) Was glaubst du, wohin ist er gegangen?
 (a-c) 'Where do you believe did he go?'

- (35a) ?Gdzie on poszedł, jak myślisz?
 where he went how think
 (35b) *Gdzie jak myślisz, on poszedł?
 (35c) Jak myślisz, gdzie on poszedł?
 (a-c) 'Where do you think that he went?'

As for the properties in (33h), Polish may allow modal particles and stress-related elements into the *jak*-clause. The structures in (36), however, are pronounced with two intonational contours.

- (36a) Jak zatem myślisz, kogo Maria kocha?
 how MP think whom Maria-Nom.F. loves
 'So, who do you think that Mary loves?'
 (36b) Jak TY myślisz, kogo Maria kocha?
 how YOU think who-Acc. Maria-Nom.F. loves
 'Who do YOU think that Mary loves?'

The most significant similarity is the communicative value of the two constructions. I have already pointed out that the *jak*-phrase always asks about the addressee's opinion. Reis (2000: 365) argues that in terms of communicative weight, parenthetical *was*-constructions are equivalent to adverbial constructions, as in (37b), which ask about the addressee's opinion.

- (37a) Wohin ist er deiner Meinung nach gegangen?
 where-to is he your opinion after gone
 'In your opinion, where did he go?'
 (37b) Wohin ist er glaubst du, gegangen?
 where-to is he believe you gone
 'Where did he go, do you think?'

Taking all the facts together, I conclude that the *jak...wh*-construction, interpretable under the Indirect Dependency Approach, involves a parenthetical structure adjoined to a full *wh*-question. The wide scope interpretation is created by integration of the denotation of the host clause into the *jak*-clause as the restriction of the existential quantifier *jak*, binding a propositional variable. The integration is signaled by the coindexation of *jak* with the host clause.

5. Conclusion

In this paper I developed an analysis of *wh*-scope marking questions in Polish. Taking pragmatic, semantic and distributional properties into consideration, I estab-

lished that the Polish construction involves an integrated parenthetical structure rather than subordination. The construction receives an adequate semantic interpretation under Dayal's IDA, the key idea of which is that the main clause serves as a semantic restriction on the existentially quantifying *wh*-scope marker. The proposed analysis explains the contrast between the Polish *jak...wh*-construction and the German *was...w*-construction can be accounted for. The two languages differ with respect to the syntactic realization of scope marking: the former involves an integrated parenthetical structure, whereas the latter subordinated structure. This conclusion provides support for Dayal's (2000: 157, 190) claim that scope marking is a universal phenomenon, which is subject to cross-linguistic variation, the locus of this variation being the syntax, not the semantics.

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