

VARIABLE SYNTAX OF THE POLISH FUTURE IMPERFECTIVE

MAKSYMILIAN DĄBKOWSKI
UNIVERSITY OF CALIFORNIA, BERKELEY
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1 INTRODUCTION

This paper investigates the variable expression of the imperfective future in Polish. The Polish future imperfective is constructed analytically by combining a finite future form of the auxiliary verb *być* ‘be’ and a non-finite form of the lexical verb. The non-finite form of the main verb has two variants: a regular infinitive and a deverbal participle.

The infinitive and participle future forms have the same semantics (Błaszczak et al., 2014), so the choice between them does not depend on the linguistic meaning a speaker might want to convey. Nevertheless, there may be stylistic, social, or syntactic factors that predict their distribution.

In this paper, I examine potential correlations between the choice of the future form and three independent variables in a corpus of phone conversations (Mykowiecka et al., 2009) and two travel blogs (Pękała, 2023; talia, 2014). The three independent variables are: (i) genre/modality (phone conversation vs. written blog), (ii) speaker gender (male vs. female), and (iii) the syntactic category of the non-finite verb (content vs. auxiliary). I find that modality and syntactic category robustly predict variant choice while gender does not.

By investigating the factors which influence the Polish future imperfective use, this paper makes a novel contribution to the field of Polish language variationist sociolinguistics. It also is—to the best of my knowledge—the first quantitative study of the variable in question. While the infinitival construction is older, both variants have coexisted for at least 550 years

(Cyran, 1961). This suggests that the Polish future imperfective variation is stylistically conditioned.

The rest of the paper is structured as follows. Section 2 summarizes previous research and lays out three hypotheses about the distribution of the Polish future imperfective variants. Section 3 describes the methods used in the study. Section 4 presents the results. Section 5 discusses the results and concludes.

2 BACKGROUND AND HYPOTHESES

Polish is a West Slavic largely fusional language spoken by over 50 million people in Poland and around the world (Urbańczyk and Kucała, 1999).

The object of this study is the variable expression of the Polish future imperfective. The future imperfective is expressed analytically by combining an inflected future form of the auxiliary verb *być* ‘be’ with either an infinitive (1a)¹ or an *l*-participle (1b) form of the main verb.²

- (1) ANALYTIC EXPRESSIONS OF THE FUTURE IMPERFECTIVE IN POLISH
- | | |
|---|--|
| <p>a. <i>będę</i>-<i>ę</i> <i>jecha-ć</i>
 be.FUT-1SG go-INF
 “I will be going.”</p> | <p>b. <i>będę</i>-<i>ę</i> <i>jecha-ł</i>
 be.FUT-1SG go-PTCP
 “I will be going.”</p> |
|---|--|

The *l*-participle is a non-finite deverbal form that partakes in a number of seemingly unrelated constructions, including past tense, conditionals, and the future imperfective in question. As such, the specific meaning contributed by the *l*-participle is difficult to pin down. Kowalska (1976) suggests that the *l*-forms convey a sense of temporal or modal “distance” from the conversational ground.

This variation in the expression of future imperfective stands out against the background of other Slavic languages. While both strategies are robustly attested, most languages fall squarely on one side of the line: East Slavic

¹ The following glossing abbreviations have been used: 1 = first person, F = feminine, FUT = future, INF = infinitive, M = masculine, N = nominalizer, NV = non-virile, PFV = perfective, PL = plural, PTCP = participle, SG = singular, V = virile.

² For comparison, perfective future is expressed synthetically by means of lexically idiosyncratic prefixation (i). Since perfective future forms do not show variation, they are outside the scope of this study.

- (i) SYNTHETIC FUTURE PERFECTIVE IN POLISH
- po-jadę*
 PFV-GO-1SG
 “I will go.”

(e. g. Belarusian, Russian, and Ukrainian) and other West Slavic languages (e. g. Czech, Slovak, Sorbian) strongly prefer infinitival future; South Slavic languages (e. g. Slovene, Serbo-Croatian) use *l*-participle future. The only two Slavic languages which admit both constructions are Polish and the closely related Kashubian (Błaszczak et al., 2014; Whaley, 2000).

While it is generally recognized that the infinitive and *l*-participle future forms do not differ meaning (e. g. Błaszczak et al., 2014), the question of what conditions the choice between the two variants has been—to the best of my knowledge—previously unaddressed. In the rest of this section, I discuss three potential factors which I hypothesize may predict the distribution of the Polish future imperfective variants.

First, the infinitival future is the older construction and was overwhelmingly predominant in written texts through the late 15th century (Cyrán, 1961). The *l*-participle forms were first attested in texts which pertain to secular life (as opposed to religious texts which tended to use the infinitival forms). Secular texts tend to be less conservative than religious texts, again suggesting that the *l*-participle future is the more innovative construction (Błaszczak et al., 2014; Stieber, 1955).

If this distinction finds its reflection in modern-day Polish, we may hypothesize that the infinitival future is associated with more formal or written language, while *l*-future forms are more frequent in casual or informal speech (2).

- (2) HYPOTHESIS 1: MODALITY AS A FUTURE IMPERFECTIVE PREDICTOR
Written/formal texts show more infinitival forms of the future imperfective than spoken/informal language.

Second, many sociolinguistic variables show sensitivity to the category of gender (Eckert, 1989). Moreover, women typically lead language change (Tagliamonte and D’Arcy, 2009). Since the *l*-participle future was innovative, we may hypothesize that women use it more often (3).

- (3) HYPOTHESIS 2: GENDER AS A FUTURE IMPERFECTIVE PREDICTOR
Women use more l-participle forms of the future imperfective than men.

Third and last, the author’s introspective judgments reveal that the choice of the future imperfective form is sensitive to the grammatical category of the “main” verb. If the main verb is itself a content verb, such as *jechać* ‘go,’ it can take the infinitival (4a) or the *l*-participle (4b) form. However, if the “main” verb is itself an auxiliary verb, such as *móc* ‘can/be able,’ the infinitival form is at least notably degraded (4a), making the *l*-participle form a strongly preferred expression of the future imperfective (4b).

- (4) FUTURE IMPERFECTIVE OF A CONTENT VERB
- | | |
|--|---|
| a. <i>będ-ę jecha-ć</i>
be.FUT-1SG GO-INF
"I will be going." | b. <i>będ-ę jecha-ł</i>
be.FUT-1SG GO-PTCP
"I will be going." |
|--|---|
- (5) FUTURE IMPERFECTIVE OF AN AUXILIARY VERB
- | | |
|---|--|
| a. <i>??będ-ę mó-c</i>
be.FUT-1SG be able-INF
"I will be able." | b. <i>będ-ę mógł-t</i>
be.FUT-1SG be able-PTCP
"I will be able." |
|---|--|

I anticipate that this syntactic factor will be a robust predictor of the future imperfective forms for auxiliary verbs, with the infinitival ones strongly avoided (6). I discuss a possible cause for this effect in Section 5. The three hypotheses are again restated in (7).

- (6) HYPOTHESIS 3: SYNTACTIC STATUS AS A FUTURE IMPERFECTIVE PREDICTOR
Auxiliary verbs show more l-participle forms of the future imperfective than content verbs.

- (7) RESEARCH HYPOTHESES
- | | | |
|-----------|--|--|
| MODALITY: | <i>written</i> $\xrightarrow{\text{predicts}}$ <i>infinitive</i> , | <i>spoken</i> $\xrightarrow{\text{predicts}}$ <i>l-participle</i> |
| GENDER: | <i>male</i> $\xrightarrow{\text{predicts}}$ <i>infinitive</i> , | <i>female</i> $\xrightarrow{\text{predicts}}$ <i>l-participle</i> |
| SYNTAX: | <i>content</i> $\xrightarrow{\text{predicts}}$ <i>infinitive</i> , | <i>auxiliary</i> $\xrightarrow{\text{predicts}}$ <i>l-participle</i> |

3 METHODOLOGY

To investigate the factors influencing the choice between the two variants of the Polish future imperfective, I analyzed data coming from two sources: a corpus of phone conversations (Mykowiecka et al., 2009) and two online blogs (Pękała, 2023; talia, 2014).

Mykowiecka et al.'s (2009) corpus is an annotated database of spoken dialogue created as part of the LUNA (spoken Language Understanding in multilinguAl communication systems) project. The corpus consists of 501 phone conversation recordings between customers and public transportation customer service agents on the following five topics: transportation route, itinerary, schedule, stops, and reduced or free fares. Data from Mykowiecka et al.'s (2009) corpus represent the spoken language modality.

The other data source comprised two online travel blogs. Two different blogs were chosen to populate the gender variable. talia (2014) is a woman. Pękała (2023) is a man. Data from the two travel blogs represent the written language modality.

Both data sources were chosen due to their anticipated frequent use of future imperfective forms. In Mykowiecka et al.’s (2009) corpus, they appear in conversations about transportation routes, itineraries, schedules, and stops. In Pękała’s (2023) and talia’s (2014) blogs, they appear in descriptions of travel plans, advice, and ads for upcoming events.

To collect the data, I searched for sentences containing tokens of *będ*, which is the future stem of the verb *być* ‘to be,’ and manually excluded all the instances where the verb did not function as the future auxiliary. I coded the remaining sentences for a number of variables, including the forms of the main verb (infinitive vs. *l*-participle), the gender of the speaker (male vs. female), and the syntactic status of the main verb (content vs. auxiliary). Specifically, four verbs were coded as auxiliaries (8) while all the rest were coded as content verbs.

- (8) AUXILIARY VERBS IN THE DATA SET
- | | | | |
|---------------|-----------------|------------------|------------------|
| a. <i>móc</i> | b. <i>umieć</i> | c. <i>musieć</i> | d. <i>chcieć</i> |
| can/be able | have skills | must/have to | want |

In total, 327 tokens of future imperfective constructions were collected. Mykowiecka et al.’s (2009) corpus of phone conversations contained 240 tokens. All of them were coded and included in the present study. I also collected 87 future imperfective tokens from the online travel blogs (Pękała, 2023; talia, 2014). Across the two modalities, 110 tokens were produced by women; 217 tokens were produced by men.

4 RESULTS

Table 1 presents the raw number of tokens, grouped by MODALITY (SPOKEN phone conversation vs. WRITTEN travel blog), FORM of the main verb (INFINITE vs. *L*-PARTICIPLE), SYNTACTIC category of the main verb (CONTENT vs. AUXILIARY), and gender (female ♀ vs. male ♂).

MODALITY ↓	FORM →	INFINITE		<i>L</i> -PARTICIPLE	
	SYN →	CONT	AUX	CONT	AUX
SPOKEN (240 total)		♀8 ♂9	♀0 ♂0	♀61 ♂140	♀11 ♂11
WRITTEN (87 total)		♀13 ♂29	♀1 ♂0	♀8 ♂14	♀8 ♂14

Table 1: Future imperfective forms by modality, syntactic category, and gender.

Table 2 shows the percentage of the infinitival variant of the future imperfective construction by MODALITY, SYNTACTIC category, and gender. Categories

with the highest rates of the infinitival variant are given in **green**. Categories with the lowest rates of the infinitival variant are given in **red**.

MODE ↓ \ SYN →	CONTENT	AUXILIARY
SPOKEN	♀ 12% ♂ 6%	♀ 0% ♂ 0%
WRITTEN	♀ 62% ♂ 67%	♀ 11% ♂ 0%

Table 2: Percentage of infinitival forms by modality, syntactic category, and gender.

The rates of the infinitival variant use seem to bear on the three hypotheses introduced in [Section 2](#). First, the infinitival variant is rare in spoken language, but much more frequent in written language. This provides evidence in favor of the first hypothesis (2), stating that the form of the Polish future imperfective reflects the difference in modality or formality between spoken and written language.

Second, gender does not seem to correlate with the choice of the future imperfective variant. While in some cells female speakers seem to use slightly fewer *l*-participle forms than male speakers, in other cells the trend is reversed. In either case, the differences between men and women are small. This provides evidence against the second hypothesis (3), which correlated the future imperfective form choice with gender.

Third, there is a near-categorical avoidance of the infinitival variant when the “main” verb falls in the auxiliary category (8). The choice of the *l*-participle variant tracks my grammaticality judgments (5), providing evidence in favor of the third hypothesis (6).

To corroborate my interpretation of the summary [Table 2](#), I fit a logistic regression using the package `lme4` (Bates et al., 2015) in R (R Core Team, 2022). The linear model call is given in (9).

```
(9) GENERALIZED LINEAR MODEL CALL
    > glm(formula = is_inf ~ modality + gender + is_aux,
         family = binomial, data = data)
```

The value of the dependent variable `is_inf` is 1 for the infinitival forms and 0 for the *l*-participle forms. The three predictors are (i) `modality`, whose value is either `blog` (written) or `phone` (spoken), (ii) `gender`, whose value is either `male` or `female`, and (iii) `is_aux` whose value is either 0 (if the main verb is a content verb) or 1 (if the main verb is an auxiliary).

The model fit summary is given in [Table 3](#). The terms `modality` and `is_aux` are both strong predictors of the future imperfective variant. The values of

modalityphone and is_aux are both negative, which means that the spoken modality and the auxiliary status of the main verb negatively correlate with the infinitival outcome. In other words, infinitival forms are predicted to most often occur in written modality when the main verb is a content verb. The value gendermale is not a significant predictor of the outcome, showing that gender does not affect the outcome of is_inf. This confirms the pattern seen in Table 2.

```

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.5720 -0.4493 -0.3791 -0.1692  2.4442

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept)    0.8922    0.3737   2.388  0.01696 *
modalityphone -3.1347    0.3661  -8.561 < 2e-16 ***
gendermale    -0.3544    0.3793  -0.934  0.35016
is_aux        -3.8276    1.0535  -3.633  0.00028 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 311.72  on 326  degrees of freedom
Residual deviance: 209.19  on 323  degrees of freedom
AIC: 217.19

Number of Fisher Scoring iterations: 6

```

Table 3: Model fit summary.

Using the package emmeans (Lenth, 2020) allows us to convert log odds into probabilities (10). We see that when the value of modality is blog, the probability of the infinitival form is much greater than when the value of modality is phone (10a). Likewise, when the verb is an auxiliary, the probability of the infinitival form is much lower than when the verb is a content verb (10c). However, the value of gender does not predict the use of the infinitival future imperfective form (10b).

- (10) PROBABILITY THAT is_inf HAS THE VALUE OF 1 BY MODEL TERM
- a. `> summary(emmeans(model, modality), type="response")`
- | modality | prob | SE | df | asympt.LCL | asympt.UCL |
|----------|-------|---------|-----|------------|------------|
| blog | 0.232 | 0.09442 | Inf | 0.09636 | 0.4603 |
| phone | 0.013 | 0.00743 | Inf | 0.00419 | 0.0394 |

Results are averaged over the levels of: gender, is_aux
 Confidence level used: 0.95
 Intervals are back-transformed from the logit scale

b. `> summary(emmeans(model, gender), type="response")`

gender	prob	SE	df	asympt.LCL	asympt.UCL
female	0.0699	0.0369	Inf	0.0241	0.186
male	0.0501	0.0261	Inf	0.0176	0.134

Results are averaged over the levels of: modality, is_aux
 Confidence level used: 0.95
 Intervals are back-transformed from the logit scale

c. `> summary(emmeans(model, is_aux), type="response")`

is_aux	prob	SE	df	asympt.LCL	asympt.UCL
0	0.29896	0.04032	Inf	0.22630	0.3834
1	0.00919	0.00942	Inf	0.00122	0.0658

Results are averaged over the levels of: modality, gender
 Confidence level used: 0.95
 Intervals are back-transformed from the logit scale

In [Figure 1](#), these findings are visualized with graphs generated with the `sjPlot` package (Lüdtke, 2020). Written text (modality phone) and content

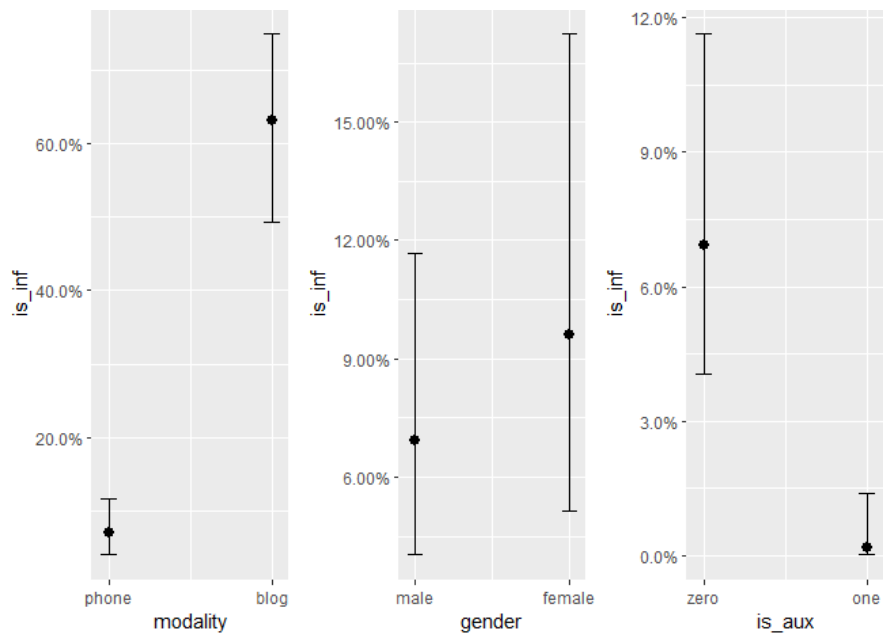


Figure 1: Predicted values of is_inf.

verbs (is_aux zero) show a strong tendency for infinitival forms, but gender does not appear to correlate with the future imperfective form.

In interim summary, the findings suggest that the choice of the future imperfective form is predicted by syntactic and stylistic factors, but not by gender. The infinitival variant is avoided when the main verb is an auxiliary verb itself and is much more common in written texts than in spoken language. This correlates with the relative age of the two constructions (Cyrán, 1961)—the older infinitival variant is associated with the written medium which tends to be more conservative and reflect a prescriptive “standard,” while the newer one is more common in spoken language.

5 DISCUSSION AND CONCLUSIONS

In conclusion, I investigated the factors influencing the choice between two semantically equivalent future imperfective constructions in Polish based on a corpus of phone conversations (Mykowiecka et al., 2009) and two online blogs (Pękała, 2023; talia, 2014). I identified two factors that predict the variant choice: modality and the syntactic status of the main verb.

While the variation in the future imperfective expression has been previously noted (Błaszczak et al., 2014), no factors conditioning it were identified. The present study is the first (to the best of my knowledge) sociolinguistic investigation of this variable, and one of few variationist studies on the Polish language (cf. Lubaś, 1989).

The first robust predictor of the outcome is the modality: written texts show a much higher rate of infinitival forms than speech. Written language is more conservative, which matches the fact that the infinitival variant of the future imperfective construction is older (Cyrán, 1961). Nevertheless, both variants have been present in Polish for at least 550 years. Moreover, contrary to findings on gender and language change (Tagliamonte and D’Arcy, 2009), gender does not appear to be a significant predictor of the variant choice. This suggests that the variation is not a reflection of an ongoing language change. Rather, the findings raise the possibility that the two different future imperfective forms have become stable correlates of different language modalities, genres, or styles.

The second robust predictor of the outcome is the syntactic category of the main verb: if the main verb is an auxiliary modal itself, it will take the *l*-form *nigh*-categorically. I speculate that auxiliary verbs prefer to appear as *l*-participles in the imperfective future construction because they themselves often take an infinitival complement (11). This is to say, the *l*-form

is preferred (11a) in order to avoid a sequence of two adjacent infinitives (11b). The infinitive forms are marked with a wavy underline.

(11) *INFINITIVE-INFINITIVE AVOIDANCE IN POLISH VERB COMPLEXES

- a. *będ-ę* *móg-ł* *po-jecha-ć*
 be.FUT-1SG be able-PTCP PFV-GO-INF
 “I will be able to go.”
- b.^{??} *będ-ę* *mó-c* *po-jecha-ć*
 be.FUT-1SG be able-INF PFV-GO-INF
 “I will be able to go.”

If this is so, the strong preference for the *l*-forms in the imperfective future can be attributed to the generalized Obligatory Contour Principle (12).^{3, 4}

(12) GENERALIZED OCP (adapted from Mohanan, 1994)
Identical elements (e. g. formatives) are dispreferred in adjacent units.

Finally, I discuss some limitations of the study and suggest avenues for further research. First, a major finding of the present study is that the future imperfective form choice correlates with modality: written texts show significantly higher rates of the infinitival variant than speech. However, each modality is represented by only one very specific genre. The written text category is represented by online travel blogs, while speech is represented by phone conversations related to public transportation. As such, it is impossible to draw more specific conclusions about the dependent variable’s predictors. For example, the study does not shed light on whether the variable correlates with modality (spoken vs. written), degrees of formality, or some more specific genre category (secular text, official document, religious text, traditional narrative, advertising text, fairy tale, etc.). In future research,

3 Polish auxiliary verbs have a strong preference for the *l*-participle form even when they *do not* take an overt infinitival complement (5). This suggests that the OCP effect may have become grammaticalized, to the effect of general antipathy between infinitival forms and auxiliary verbs in the future imperfective.

4 For parallel data in English, consider complement restrictions on the inchoative verb *start*. The English verb *start* can take a gerundive (iia) or infinitival (iib) complement. According to native speaker judgments (Katie Russell, p.c.), the two constructions do not differ in meaning. However, when *start* is itself an infinitival complement to another verb, the gerundive form of *start*’s complement is strongly preferred (iii).

(ii) *INFINITIVE-INFINITIVE AVOIDANCE IN ENGLISH VERB COMPLEXES (Katie Russell, p.c.)

- a. *I started going.*
 b. *I started to go.*
- (iii) a. *I want to start going.*
 b.^{??} *I want to start to go.*

one could analyze texts representing many more categories to narrow in on more specific predictors of future imperfective use.

Second, if the variation in future imperfective use is conditioned by style or formality, it is possible that it has social significance. Native speakers do not have any conscious judgments about the social meaning of the two different forms (i. e. they do not openly judge one as, for example, more “formal”). This is to say, the social meaning of the variant choice (if any) flies below the radar of speaker consciousness. Nevertheless, they might judgments that are subconscious. If so, a person using a lot of infinitival forms may be judged, for example, as competent or cold. To investigate this hypothesis, one could conduct a matched guise study (Lambert et al., 1960) which manipulates the form of the future imperfective.

Third, I speculate the variation in the future imperfective use is stable (not an ongoing language change). To corroborate (or invalidate) this hypothesis, one could conduct an apparent time study, investigating whether future imperfective use varies with age. If so, this is suggestive of an ongoing change or age grading. Otherwise, the variation is stable and conditioned by factors of style, modality, genre, etc.

Fourth and last, the *l*-participle forms are marked for gender and number, always agreeing with the subject (13). In this, they differ from the infinitives which show no morphological agreement.

- (13) GENDER AND NUMBER MARKING ON *L*-PARTICIPLES
- | | | |
|-------------------------------------|--------------------------------------|-------------------------------------|
| a. <i>jecha-t-∅</i>
GO-PTCP-M.SG | b. <i>jecha-t-a</i>
GO-PTCP-F.SG | c. <i>jecha-t-o</i>
GO-PTCP-N.SG |
| d. <i>jecha-l-i</i>
GO-PTCP-V.PL | e. <i>jecha-t-y</i>
GO-PTCP-NV.PL | |

Whaley (2000) observes that as the *l*-participle future was becoming more frequent, not all gender-number combinations have been adopted at the same rate. Rather, “the spread of the participial future has taken place hierarchically, from the least-marked masculine singular into more marked forms such as plural and feminine and neuter singulars” (p. 50). The infinitival forms in the present study were not coded for the gender and number of the subject (and consequently, they were not coded for the agreement marking which would appear on the verb if the *l*-participle were used instead of the infinitive). Future research could investigate if contemporary Polish still shows asymmetries between the use of infinitive and *l*-participle forms depending on grammatical gender and number.

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