Università Ca'Foscari Venezia

Uniwersytet Pedagogiczny im. Komisji Edukacji Narodowej w Krakowie

From Input to Output: Grammatical features in the verbal productions of French L2 learners exposed to Meaning-based vs. Form-based input

Agnieszka Latos

Università Ca' Foscari / Uniwersytet Pedagogiczny

French team in VILLA

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Main aim of the study:

To describe and compare chosen formal properties of the utterances produced in the offline Route Direction task by two groups (FB *vs.* MB) of initial French L2 learners who took a 14-hour Polish course within the Villa project.

Main variable of the study

- Predominantly oral, monolingual & communication-based TL input differed in the degree of meta-linguistic explicitness (Input enhancement, Sharwood Smith 1993):
- Meaning-based (MB): no overt focus on TL formal features & strong limitation of explicit corrective feedback

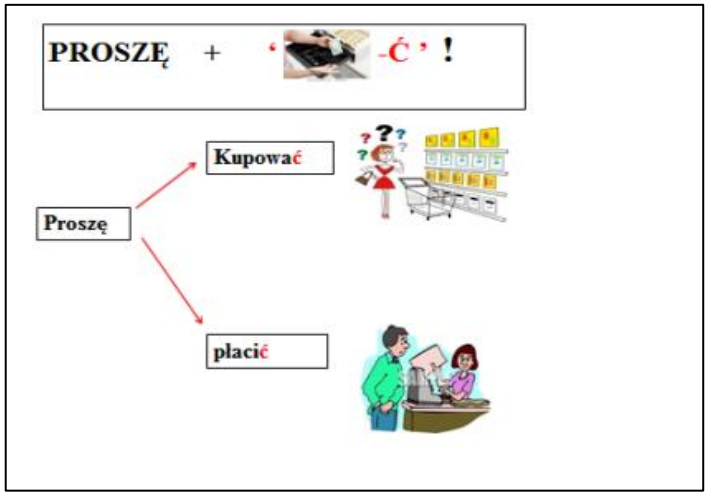
VERSUS

- Form-based (FB): overt focus on chosen TL formal features & explicit corrective feedback

Examples of form-based input enhancement

MB

FB



“metalinguistic” formulas:
1. No proszę [ć] ‘so, please [ć]’ (1 occurrence),
2. Proszę plus [ć] ‘Please plus [ć] (2 occurrences),
3. To jest struktura numer 2 proszę plus ć ‘This is the structure number 2, please, plus [ć]’ (1 occurrence)

Experiment conditions

- Zero stage: the experiment participants had zero knowledge of the target language immediately before the beginning of the experiment;
- Controlled input: fully-controlled input with *a-posteriori* analysable content & its statistical, distributional & formal characteristics.

Main assumptions

- Input - the basis for the "L2 grammar of use" of all target forms and constructions analysed in the present study;
- Strong interdependence between: (i) input grammar (i.e. form – function - discourse context mapping), (ii) target linguistic features statistical (type and token-frequency) & distributional characteristics, and (iii) their formal organization in the learners' outputs.

(Bybee 2006, Ellis 2002, Ellis & Larsen-Freeman 2006, Hudson 2002, Tomasello 2003, Vouloumanos 2008 among others)

Main hypothesis

INPUT --- FORM-BASED input enhancement --- OUTPUT

- If the two inputs result comparable in respect of the presence and use of the linguistic elements under exam, observed differences in the organisation of these formal properties in the experiment participants' verbal outputs **on group level**, may be attributable to the different presentations of target grammatical features in the FB and MB teaching sessions

Participants

- Two groups of L1 French learners

MB	FB
17 subjects	19 subjects
13 F & 4 M	12 F & 7 M
mean: 22-year-old, mode: 22-year-old (7 out of 17 subjects) median: 11 years	mean: 21-year-old, mode: 20-year-old (8 out of 19 subjects) median: 6 years

- Learners L1 and other L2s (English, Spanish) - marked differences with respect to phonological and grammatical properties of Polish

Route Direction Test

- End of the course (ca. 14 hrs. of input)
- Elicited by a Polish native speaker with the aid of a simplified city map
- Individual testing
- Verbal production

1. We are here, at the railway station in Cracow (please, indicate red dot on the map). I am (please, indicate yourself) a tourist from Warsaw, and you (please, indicate the subject) live in Cracow.
2. I (please, indicate yourself) – tourist ask for information.
3. Excuse me, how to get to the street Dobra 4?
4. While the subject is giving route-directions, the experimenter playing a role of a tourist carefully listens and responds: tak (yes), aha (ok) etc.

Typical discourse sequence in the Route Direction task

Interviewer's question: Jak iść do **ulicy** Dobrej 4?

Learner's responses:

1. **Proszę iść prosto ulicą …./obok ….**
   „Please go straight street …./next to…"
2. **Proszę skręcić w prawo/w lewo w ulicę …. / za …**
   „Please, turn into right/left in street …/ behind .."
3. **Ulica znajduje się/jest na prawo/na lewo / Dom znajduje się/jest na ulicy…**
   „Street is on right/left/ house is on street"

Grammatical features for analysis

- Noun *ulica* ‘street’:

  inflectional and morpho-syntactic variation (TODAY);

- Imperative construction *proszę* ‘please’ + infinitive: combinatorial pattern and its constituents;

- Spatial fixed expressions: *w lewo/w prawo vs. na lewo/na prawo* ‘into + left/right (side)’ *vs.* ‘on + left/right (side)’:

  formal composition and morpho-semantic coding.

Reasons for selection

The chosen grammatical elements are:

- Focused on several times in the FB session;
- „present” or structurally „required” in all learners’ productions.

Examples of learners' productions

Learner 1101	Learner 1201
OK. JESTEM STENSZY@ / IDŹ PRESTO NA ULICA NISKA/ OBOK SZPITALU STRĘCIĆ W PRAWO/ W PRAWO NA ULICA HULJUCKA SLOWENKEGO / IDŹ PROSTO PROSTO PROSTO / hm@fp NA / OBOK SKLEP STRENCIĆ W LEWO / I ZNAIDUJE SIĘ / hm@fp/ DOM NA ULICY DOBREJ NUMER CZTER/ (DZIĘKUJĘ)	PROSZĘ IŚĆ PROSTO NA ULICE NISKĄ / NISKĄ/ ZA OPITALEM PROSZE SKRĘCIĆ W PRAWO NA ULICE SKOWACKIEGO/ (uh@fp) PROSZE IŚĆ PROSTO / OBOK RESTORANCJI SKOLE TEATRU SKLEP/ ZA SKLEPEM PROSZĘ SKRĘCIĆ W LEWO NA ULICE DOBRE / I DOM KOWALSKI / ZNA / ZNA JĘZYK NA LEWO/ (uh@fp DZIĘKUJĘ BARDZO)

Introduction to the analysis of oral productions

- Words display of three types of representations: phonological (sound form), morphosyntactic (grammatical or “relational”) and semantic (cognitive and pragmatic content or function) (Carroll 2013).
- Their coding by a L2 learner does not necessarily occur at the same time and not in the same way (Carroll 2014).

Diverse L2 phonological reproductions of target forms

Session	PROSZĘ [ˈprɔʃɛ]	IŚĆ [iɕt͡ɕ],	SKRĘCIĆ [ˈs̪krɛ̃ɲt͡ɕit͡ɕ]	PROSTO [ˈprɔstɔ]	PRAWO [ˈpravɔ]	LEWO [ˈlɛvɔ]	ULICA [uˈlʲit͡ʃa]
MB		idź, iśdź, iśt, iszcz, iścz	stręcić, strencić, szkrencić, szkrenczisz skrencisz, skrenczić stręnć, czenczić, sczenczisz skrenciszt skroci skróci	presto, prostu, prosti, prokto	(w) grawo, (w) prawu	(na) wlewo, (w) liwo	ulicze ulika ulicza
FB	plosze, procze plocze	idź, inszar, ić, isz, icz, iś	sklęcić, skrencić, skracik, skrenci, skrencisz sprić	prasto	(w) prewo, (w) blawo,	(na) wlewo, liewo,	ulicze ulika ulicza uliczą ulicen

Phonological problems

Examples	Description
najduje się - znajduje się	omission of initial consonant. OK
*skrenci**sz** - skrencić* *i**dź** - iść*	substitution of the ending of morphologically variable word (critical or restrictions on analysis)
*uli**k**a - ulica* *uli**cz**e - ulice*	substitution of the consonant sound within the stem of a morphologically variable word. OK
*prost**u** - prosto* *prost**i** - prosto* *pr**e**sto – prosto* *praw**u** – prawo* *l**i**wo – lewo* ***bl**awo - prawo* *pro**cz**e - prosze* *l**i**ewo – lewo*	substitution of the vocal or consonant sound, including sound cluster, in any position of morphologically invariable word. OK
***(na) w**lewo – na lewo*	additional sound incorporation due to mistaken word segmentation (critical)

Lexical problems: examples

1. *spać* ‘to sleep’ instead of *skręcić* ‘to turn into’;
2. *czerwony* ‘red’ instead of *cztery* ‘four’;
3. *zna język* ‘(he/she) knows language’ and *nazywa się* ‘(it) is called’ instead of *znajduje się* ‘there is’.

Self-correcting

1. /Prosze idź / no / prosze icie / **ić** prosto za uliczą **ulicze** niskon / (Learner 1212)
2. /Obok spita- szpitalem skrencić w prosto na/ oh@fp **w prawo**/ (Learner 1119)
3. Prosze iść w lewo /w ulic- ulicy **w ulice** dobrą/ (Learner 1202)

Criteria of analysis

Predominantly morphosyntactic and semantic criteria (contextual disambiguation) :

4. Idź **presto** na ulica niska (Learner 1101) OK
5. Skrencić w **blawo** (Learner 1219) OK
6. Proszę **xx** w prawo (Learner 1104) OK
7. Prosze/ hm@fp **spać** xx ulicze Huljeszke Stokiego (Learner 1205) NO

+ Analysis restrictions due to L2 phonological variation in inflectional endings (nominal or verbal items) and impossible to disambiguate elements (ex. *piese*, Learner 1120)

INPUT

Ulica in the input
Lesson 1

MB **223 line**	**FB** **112 line/Part B**
TEA: Ona jest Polką 'She is Polish' TEA: Ona mieszka w Polsce. 'She lives in Poland' TEA: Mieszka w Warszawie. '(She) lives in Warsaw. ***TEA: Adres ulica Dobra numer cztery.**	TEA: On ma na imię Filip. 'His name is Filip.' TEA: Ten chłopiec też mieszka w Polsce; w Warszawie. 'This boy also lives in Poland, in Warsaw' ***TEA: Adres ulica Dobra numer cztery.**
Ca. 400 words	Ca. 4000 words

Input usage patterns: *ulica* Lessons 1-4

	Syntactic contexts	Examples	English equivalent
NOMINATIVE: ULICA			
Pattern A	Syntactically unconstrained word within the address frame (visually presented)	*Ulica: Wysoka 67* *Miasto: Kraków* *Kraj: Polska*	Street: Wysoka 67 Town: Kraków Country: Poland
Pattern B	Grammatical subject of a simple sentence (declarative= free order/question)	*Ulica nazywa się ..* *Nazywa się ulica ..* *Jak nazywa się ulica?*	"(the) street is called .." "Called is (the) street.." *'The street name is ..'* 'How is called (the) street?'
Pattern C	Copula construction To/Tutaj/Tu/Tam + (jest) + NOM.	*To jest ulica Wysoka* *To ulica Wysoka* *Tutaj/Tu jest ulica Niska* *Tam jest ulica ..*	This is (the) street Wysoka This (is the) street Wysoka Here is (the) street Niska There is (a) street

Input usage patterns: *ulica*
Lessons 5-6

LOCATIVE: ULICY			
Pattern A	Prepositional phrase: NA + noun	*Mieszka na ulicy* *Eryk znajduje się na ulicy* *On jest na ulicy*	(he/she) lives on (the) street Eryk is on (the) street He is on (the) street
Pattern B (Lesson 7) *rare	Prepositional phrase DO + noun*	*Jak iść do ulicy?*	How to get to (the) street?

Input usage patterns: *ulica*
Lessons 7-10

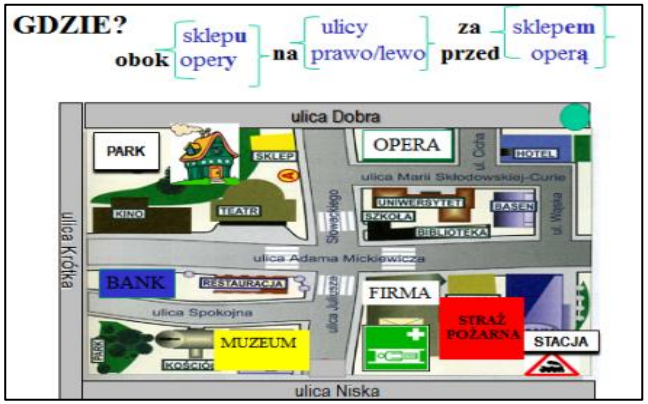
ACCUSATIVE: ULICĘ			
Pattern A	Prepositional phrase: W+ noun	*Skręcić w ulicę* *Proszę skręcić w prawo w ulicę* *Skręcić obok szpitala w ulicę*	Turn into (the) street Please, turn into right into (the) street Turn next (to the) hospital into (the) street
Pattern B *extremely rare (1-2 occurrences)	Movement verb + prepositional phrase: NA + noun*	*Jak iść na ulicę?*	How to get to (the) street..?

Input usage patterns: *ulica*
Lessons 7-10

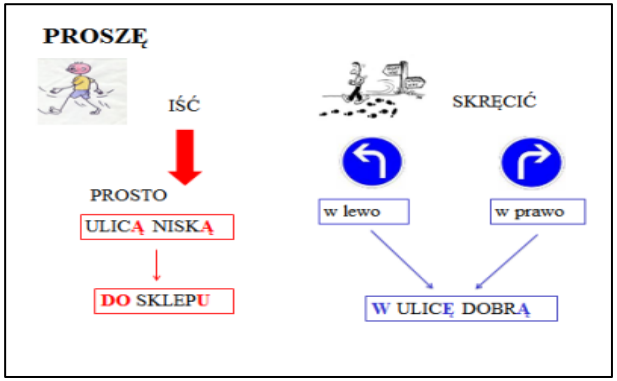
INSTRUMENTAL: ULICĄ			
Pattern A	Syntactic structure: Iść + direct verb complement	*Proszę jechać prosto ulicą* *Proszę iść prosto ulicą* *Proszę iść ulicą*	Please, drive straight (down the) street Please, go straight (down the) street Please, go (down the) street

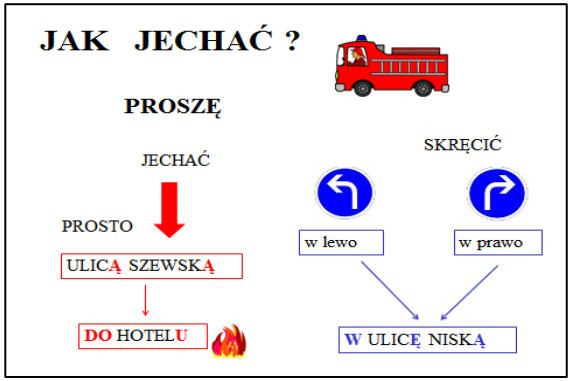
Ulica: FB input enhancement

STATIC CONTEXT



DYNAMIC CONTEXT





Temporal distribution and token-frequency of *ulica* in the MB and FB input.

	MB				FB			
CASE	**NOM**	**LOC**	**INST**	**ACC**	**NOM**	**LOC**	**INST**	**ACC**
ENDING	**- A**	**- Y**	**- Ę**	**- Ą**	**- A**	**- Y**	**- Ę**	**- Ą**
LESSON								
1	3				2			
2	4				2			
3	2				2			
4	3				1			
TOTAL	**12**	**0**	**0**	**0**	**7**	**0**	**0**	**0**
ONE FORM	**NOM**				**NOM**			
5	2	3			4	1		
6	23	28			24	14		
ADDED	*25*	*31*			*28*	*15*		
TWO FORMS	**NOM**	**LOC**			**NOM**	**LOC**		
TOTAL/9H	**37**	**31**			**35**	**15**		
7	49	12	8	19	18	22	28	28
8	34	7	9	7	32	30	45	21
9	15	9	14	3	9	13	16	3
ADDED	*98*	*28*	*31*	*29*	*59*	*65*	*89*	*52*
FOUR FORMS	**NOM**	**LOC**	**ACC**	**INST**	**NOM**	**LOC**	**ACC**	**INSTR**
TOTAL/13.5H	**135**	**59**	**31**	**29**	**94**	**80**	**89**	**52**
10/0.5H	11	2	2	0	5	2	4	0
TOTAL	**146**	**61**	**33**	**29**	**99**	**82**	**93**	**52**
ALL FORMS TOTAL	**269**				**326**			

Inflected forms of *ulica* and prepositions.

	MB				FB			
CASE	**NOM**	**LOC**	**INST**	**ACC**	**NOM**	**LOC**	**INST**	**ACC**
ENDING	**-A**	**-Y**	**-Ę**	**-Ą**	**-A**	**-Y**	**-Ę**	**-Ą**
PREPOSITION	Ø	NA	W	PROSTO*	Ø	NA	W	PROSTO*
ADJACENT	-	54	25	*26	-	72	86	*49
NOT ADJACENT	-	0	6	0	-	0	6	0
TOTAL	146	54	31	26	99	72	92	49
DIVERSE	-	DO	NA	Ø	-	DO	NA	Ø
	-	7	2	3	-	10	1	3
Total ALL	**146**	**61**	**33**	**29**	**99**	**82**	**93**	**52**

Conclusions

- MB session: *ulica* 146 (54%), *ulicy* 61 (23%), *ulicę* 33 (12%), *ulicą* 29 (11%) - Nominative form two and half to five times higher than other inflected forms;
- FB session: *ulica* 99 (30%), *ulicy* 82 (25%), *ulicę* 93 (29%), *ulicą* 52 (16%) - „more balanced" distribution

In two sessions:

- Different frequency and proportion of inflected forms;
- Parallel usage patterns and temporal distribution: 0-6 hrs. of input: 1 form, 7.5 to 9 hrs. of input: 2 forms and 9 to 13.5 hrs. of input: 4 forms.

Conclusions

The main MB/FB differences in the employment of target nominal forms

- not qualitative: identical morpho-syntactic & discourse contexts of use
- but quantitative: **diverse proportion** of inflected forms

In the MB session:

- More frequent static structures;
- Less frequent dynamic structures.

Examples of dynamic structures MB input

1. Za szpitalem proszę skręcić w prawo/ hm@c **ulica Juliusza Słowackiego**/

‘Behind hospital please turn into right/ hm@c street.NOM Juliusza Słowackiego’

2. Za parkiem proszę skręcić w prawo/ **ulica nazywa się Krótka**/

‘Behind park please turn into right/ street.NOM is called Krótka.’

3. Obok parku proszę skręcić w prawo/ dobrze/ hm@c **to jest ulica Krótka**/

‘Next (to) park please turn into right/ good/hm@c this is street.NOM Krotka

(All examples from TEA line, lesson 7, MB session).

OUTPUT

Output:
Inflected forms of the word *ulica*

	MB		FB	
ITEMS PRODUCED	**55**		**53**	
-A	**48**		**16**	
	Items	**Learners**	**Items**	**Learners**
ULICA	34	12	12	5
ULIKA	8	2	1	1
ULICZA	6	2	3	2
-E	**5**		**33**	
ULICE	2	1	24	11
ULICZE	3	1	8	3
ULICE(N)	0	0	1	1
-Y	**2**		**2**	
ULICY	2	2	2	2
- Ą	**0**		**2**	
ULICĄ	-	-	2	2
ENDINGS / EXCLUDED ITEMS	1 -y		3 -y, 2-a, 1-e, 1-ą	

Output: Inflection variation in individual learners' productions .

LEARNERS DETAILS	**MB**	**FB**
Learners who use any inflected form of '*ulica*'	17	19
Learners with only 1 ending, of which:	**15**	**13**
NOM. -*a* only	14	5
INST. -*e* only	1	8
Learners with at least 2 different endings, of which:	**2**	**6**
NOM. -a & LOC. -y	1	0
NOM. -a & INST. -e	0	2
INST. -e & ACC. -ą	1	2
INST. -e & LOC. -y	0	2
TOTAL LEARNERS	**17**	**19**

Ulica in learners' output: dynamic contexts

DINAMIC CONTEXTS	MB	FB
Movement verb pattern:		
A. Iść ulicą	19	19
Iść +prosto+noun	11	12
*Iść+prosto + preposition+noun**	6	7
Iść +prosto + To jest	1	0
*Iść+preposition**	1	0
Ending correctness	0%	6%/17%/33%
B. Skręcić w ulicę	30	28
Skręcić + w prawo/w lewo + prep w + noun	0	4
*Skręcić + w prawo/ w lewo + diverse prep +noun**	16	9
*Skręcić+w prawo/lewo+ noun**	12	14
Skręcić + w prawo/lewo + To jest	1	0
*Skręcić +noun**	1	1
Ending correctness	16%	14%/68%/75%
TOTAL	**48**	**47**

Ulica in learners' output: static contexts

STATIC CONTEXT	MB	FB
NOM + jest/znajduje się	4	3+1*
Endings	75% correct	67% correct
NOM+nazywa się	1	0
Endings	100% correct	-
PrepPhrase na ulicy	1	1
Endings	100% correct	100% correct
TOTAL	**6**	**5**

Static contexts - examples

TYPE	MB	FB
1	NUMER SZTERY **ULICA** DOBRA XX NA LEWO/ I ZNAJDUJE SIĘ NA LEWO NUMER CZTERY **ULICA** DOBRA/ SCZTERY **ULICZE** DOBRE ZNAJDUJE SIĘ DOM SKOWALSKI/ ZNAJDUJE SIĘ NA LEWO **ULIKA** DOBRA NUMERO CZTERY/	NUMER CZYTERY **ULICY*** DOBR**EJ** ZNAJDUJE SIE NA LEWO/ **ULICZE** DOBRE NUMER CZTERY JEST W LEWO/ I **ULIKA** DOBRY XX OBOK SKLEP/ **ULICA** DOBRA I DOM KOWALSKI JEST NA LEWO/
2	I ZNAIDUJE SIĘ DOM **NA ULICY**	ZA SKLEPU NA **ULICY** DOBREJ I
3	I NAZYWA SIĘ NUMER CZTERY **ULICA** DOBRA	

Conclusions 1

- After 14hrs. of **guided** exposure, learners in both groups were able to verbally produce formal aspects of the instructional input, „approximating at their best" target linguistic forms and constructions previously encountered in the input;
- What significantly varied among learners was the extent to which they succeeded to orally realise diverse linguistic features in a target-like manner or, vice-versa, the extent to which they omitted or misused obligatory linguistic forms, despite the evidence from the input that such elements are mandatory in the target language. This variation has been attested **both on group and individual level;**

Conclusions 2

- Linguistic input that the learners were exposed to played a fundamental role in their use of target linguistic forms and constructions (“patterns”) as well as in the formal organisation of their discourse in more complex units;
- FB learners **outperformed** MB learners on **group level**;
- FB and MB input **differed** not „qualitatively” but „quantitatively”: *possible effect of form-based input manipulation on input statistical and distributional properties?*

Explanation?

- Input enhancement, aiming at focusing on certain syntactic patterns and morphological endings, led the teacher to stick more to such features and to produce them more frequently during the FB lessons in which the forms were dealt with and overtly shown;
- In the MB session, the teacher produced to less extent morphologically varied nominal forms. She was not „urged" to put emphasis on chosen formal elements in the input because the syllabus was not form-oriented. She freely "opted" for less complex syntactic or linguistic means that had already been introduced to the learners ("default forms").

Future perspectives

Role of input enhancement in L2 grammar learning:

- Does the input enhancement influence statistical characteristics of the input, contributing to the increase of its morphosyntactic diversification and/or to a more homogenous distribution of formal cues during classroom exposure?
- Does the input enhancement render formal cues more salient in the input, facilitating their noticing by learners and prompting the emergence of grammatical features in learners' production?

Future perspectives

Importance of other factors, ex. individual differences:

- External didactic interventions undertaken in order to make grammatical cues more salient to learners support and accelerate L2 learning process but do not guarantee grammatical learning gains.

1206 F PROSZE IDŹ PROSTO ULICĄ NISKĄ/ ZA SZPITA-LEM PROSZE SKRENCIĆ W PRAWO/ PROSZE IDŹ PROSTO OBOK RESTORACJI OBOK SZKOLE OBOK TEATRU / I ZA SKLEPIEM PROSZE SKRENCIĆ W LEWO / DOM KOWALSKICH ZNAJDUJE SIĘ NA LEWO/ (DZIĘKUJĘ)	**1220 F** PROSZE ISZ PROSTO ULICZA NISKA / uh@fp/ A POTEM PROSZE XX W PRAWO XX ULICZE SLOWACZKIEGO/ uh@fp/ XX IŚ PROSTO I / OBOK SKLEP SKRENCIĆ W LEWO / ULICZE DOBRA NUMERO CZERY XX / (DZIĘKUJĘ BARDZO)	**1104 F** hm@fp/ PROSZE IDŹ PROSTO ULICY NISKĄ / I ZA SZPITALU PROSZE SKRENCIĆ W PRAWO XX ULICE JULIUSKA SŁOWACKIEGO / I hm@fp/ A POTEM PROSZE IDŹ PROSTO PROSTU OBOK TEATRU OBOK SZKOŁY I / ZA SKLEPEM PROSZE IŚDŹ W LEWO XX ULICE DOBRĄ / I hm@fp / TUTAJ ZNAJDUJE SIĘ xx DOBRY CZTERY NA LEWO / (DZIĘKUJĘ BARDZO)

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