IN THE NAME OF SCIENTIFIC PRECISION: VÁCLAV HAVEL'S PTYDEPE

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1. Introduction: Václav Havel's *Memorandum*

Ptydepe, a constructed language, is the centerpiece of Václav Havel's play *Memorandum*. The memorandum in the title refers to a note sent to Josef Gross, the director of an unnamed organization. This memorandum is written in Ptydepe, an artificial language, and contains information about an audit. Since Gross is unable to read it, he has no way of knowing that the memorandum clears his name and supports his stance against Ptydepe. Gross becomes trapped in a type of catch-22 situation: in order to find out what is in the memorandum, he needs permission to have it translated, but obtaining permission depends on knowing what is in the memorandum. After resisting the whole project of implementing Ptydepe, Gross is forced to resign, as the only people authorized to translate Ptydepe texts turn out to be more influential than the director himself. Gross is replaced by his former deputy Baláš, a pragmatic supporter of Ptydepe. However, the language's extraordinary complexity results in a situation where nobody is able to master the language. As the situation starts to spin out of control, the whole project collapses. Baláš is demoted again to the position of deputy-director and the power hierarchy seems to be brought back to its original state. Yet soon after Gross comes back to the director's position, he learns that a new artificial language, Cho-

rukor, has been implemented. Gross finds himself to be the director in name only, while Baláš in reality holds more power.

In the play, Ptydepe was supposedly created as a substitute for natural languages, which were considered insufficiently precise for administrative (and possibly other) official modes of communication. Ambiguity (the main disadvantage of natural languages, according to Ptydepe supporters) is to be overcome by Ptydepe's unique features: it maximizes redundancy to differentiate meanings. Rare words are longer, while commonly used words are shorter. At the former end of the spectrum is the word referring to a bird, *rorýs říční* 'river swift', which consists of 319 letters,[1] while at the latter end of the spectrum are the words *gh* 'whatever' and *f*, which is reserved for future use to apply to some potentially even more open-ended meaning.

Ptydepe is intended as a replacement of the "old and backward" with the "new and progressive." This was a notion typically propagated under socialism, e.g., in the collectivization of agriculture or industrialization. Similar to such socialist measures, Ptydepe is supposed to be *the* new "precise" mode of communication, replacing the existing natural language, which is obsolete and less effective. The "scientific" nature of Ptydepe is an undeniable allusion to socialist ideology, which attempted to justify various notions by packaging them as "scientific," as in "scientific Marxism."[2] Havel, embedded in socialist Czechoslovakia, undoubtedly drew inspiration from his own experience from his time and society.

Ptydepe, however, does not uniquely echo socialism. It mirrors ideological "doublespeak," exposing the discrepancy between expectations and reality. Ptydepe is claimed to be a language that enhances understanding and precision in communication, while it actually produces the opposite manipulative effects. This article will compare the functions of Ptydepe from several angles. While it discusses corpus research on socialist speeches for illustration, it will attempt to connect these results to similar discourse strategies that go beyond a specific political system.

2. Aims and Methodology

Leaving aside the interpretation of Ptydepe as a parody of socialist policies, this article specifically aims to focus on Havel's "craft": how ideas are consistently built on linguistic materials within the text of the play. It explores the

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1. Ptydepe is discussed in terms of letters rather than phonological values in the play. However, the differences between the orthography and phonology can be minimal when Czech actors in the actual performances had to invent a phonological representation in which the orthography closely matches the phonological value. See Kučera 1961 where phonemes are presented mostly by the existing orthography. Even if there were differences between the orthography and phonology, they do not invalidate the points made in this paper, which focuses on the discourse functions of Ptydepe.

2. Cf. a compulsory course in all Czech universities during the 1970s and 1980s.

process of how Ptydepe serves as a vehicle to manipulate and monopolize power within and beyond the socialist discourse. We argue that Ptydepe, contrary to how its proponents describe it in the play, is paradoxically a language that intensifies opacity. Its opaque properties, which characterize socialist (and other) discourse(s), are brought to the extreme to highlight their potential consequences: incapacitating people from self-expression. Ptydepe is moreover a language where power relations are explicitly built in without allowing room for speech participants to negotiate meanings. It is thus a language designed to monopolize power. This article is an attempt to unpack Ptydepe and its function in the play primarily on the basis of linguistic features obtained from quantitative and qualitative analysis of the text.

The following section discusses the data directly extracted from the texts in Ptydepe (Section 3). Section 4 examines the relationship between natural language use and proficiency in Ptydepe. Section 5 zooms in on the relationship between Ptydepe and the linguistic features-discourse of Perina (the Ptydepe instructor) in his own natural language; results from research on socialist speeches are used to demonstrate the connection. Section 6 considers the metalinguistic description of Ptydepe and its implications. Sections 3 and 4 apply corpus linguistic techniques (rank-frequency distribution and keyword analysis), while qualitative methods are used in Sections 5 and 6. Conclusions are in Section 7.

Our use of a multi-faceted approach is motivated by the fact that *Memorandum*, as an artistic text, creates the image of Ptydepe on multiple levels: the Ptydepe language samples themselves, the metalinguistic descriptions of Ptydepe, and the speakers' discourse patterns in their first language (L1), including genre-related linguistic features.

3. Quantitative evidence: Can Ptydepe replace a natural language?

Ptydepe is characterized in Havel's play as a failure, but does the language material used in the play really demonstrate its disadvantages? Quantitative data can show explicitly where Ptydepe fails as a learnable language.

For this purpose we chose to look at the Rank-Frequency distribution, also known as Zipf's law (Baayen 13), to compare the quantitative properties of natural language and Ptydepe. If we count frequencies for all word-types in a text or corpus and sort them in descending order, we see that there are usually only a few words with high frequency (mainly function words such as conjunctions, pronouns, and numerals) and many rarely used words (especially those having just one occurrence). The latter low-frequency items are typically content words.

The comparison of rank-frequency distribution in the chart below consists of all occurrences of Ptydepe in Havel's *Memorandum* versus an average of four identically long samples of authentic written Czech from the corpus SYN2015 (Křen et al.).
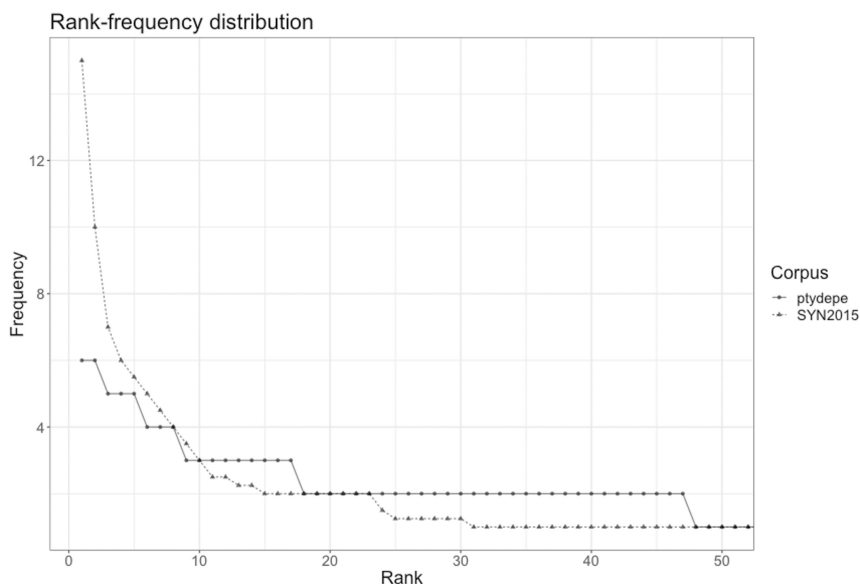
Rank-frequency distribution

Figure 1. Rank-frequency distribution of Ptydepe occurrences in Memorandum (313 words) and a Czech text of identical length (average of 4 random samples).

The obvious difference between the two sets of data is that Ptydepe has a much flatter curve. We can only speculate about the properties of a language with this shape, but based on what is known about Zipfian distribution, we can assume that Ptydepe would have fewer function words and more content words. This could be achieved by excessively incorporating grammatical features into the content words (e.g. by inflection or agglutination).[3] In comparison to Czech (as represented by SYN2015)[4], which is already a highly inflected language, the extreme level of grammatical integration in Ptydepe is obvious. A blurred border between function and content words indicates that the language would be unequivocally difficult to learn, as the number of items in the mental lexicon would be unusually high. This is consistent with one character's remark that Ptydepe *Klade nesmírné nároky na paměť* ('places unusual demands on the memory') (188).

The surface representation of Ptydepe in the text (word forms delimited graphically by spaces) informs this interpretation. According to the metalin-

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3. Another possibility is that the function words were made longer. As natural languages often tend to have shorter function words (cf. grammaticalization leads to reduction in length (Bybee et al. 1994)), this scenario would make Ptydepe even more unnatural and artificial.

4. The curve for SYN2015 represents only the most frequent words, i.e. the grammatical words; as a consequence, the shape of the curve would be more or less identical for all registers of Czech.

guistic description of the language in the play, Ptydepe consists of smaller se-
mantic units called "sub-words" (i.e., presumably the graphic segmentation
does not correspond to the segmentation based on semantics), but the text
does not indicate where the boundaries between sub-parts of words take
place. Given that the actual distribution of meaning-bearing units (i.e., sub-
words) might look different, it is likely that the above-mentioned tendency
would be even more pronounced (with a flatter curve) if the inventory of
types were larger.

Admittedly, the quantitative data alone does not entirely rule out the possi-
bility of obtaining a more "natural" distribution shape when taking sub-words
into consideration. Nevertheless, these results, when combined with the qual-
itative data discussed below, suggest that Ptydepe indeed differs from natural
languages in its general distribution pattern. It does not distinguish between
function and content words, it maximally avoids word repetitions, and it is
highly unlikely that a language with these properties could even function as
a usable and learnable artificial language, not to mention the possibility of its
further evolution into a natural language. Ptydepe as represented in the play
is not a demonstration of a potentially usable artificial language. Although
this can be gleaned from the entire text of the play, the quantitative data pro-
vides strikingly visible and measurable evidence. The motivation to create
Ptydepe as the centerpiece for the play must be sought elsewhere. We there-
fore examined the linguistic features of three central characters (Gross, Baláš
and Perina) and their affinity to Ptydepe, and the interpretation of metalin-
guistic comments made in the text in the next sections.

4. Quantitative Data: Discourse style in Czech and proficiency in Ptydepe

According to Perina, one can only master Ptydepe when one believes in it
(118). This seems indeed to be the case in the play: Gross, who clearly does
not believe in Ptydepe, does not speak the language. Baláš, who uses Ptydepe
purely to advance his own career, is slightly more competent in Ptydepe, but
is far from being able to translate a text. Perina, who is totally dedicated to
the artificial language, is the expert and the most proficient in Ptydepe among
the three. This section will focus on these three characters with respect to
their own natural language use.[5] The data shows that the pattern of their nat-
ural language use is negatively correlated with their proficiency in Ptydepe.
The more proficient the speaker is in Ptydepe, the less dynamic and less ad-
dressee-directed is his L1 use.

Table 1 below shows the prominent lemmas (keylemmas (Scott and Trib-
ble)) that could potentially occur in addressee-directed communication of

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5. We do not claim a cause-effect relationship between Ptydepe proficiency and L1 use, but
report consistency between the two.

Table 1: Comparison of keylemmas and their word forms used by Gross, Baláš and Perina (forms used for addressee-directed communication)

Keylemmas with addressee-potential directed function	Total frequency of relevant keylemmas	Word forms for addressee-directed communication	Frequency of the word forms used for addressee-directed communication
Gross (total number of tokens in the text: 3493			
kolegyně 'colleague (fem.)'	10	vocative	8
pozorovatel 'observer'	9	vocative	5
kolega 'colleague (masc.)'	35	vocative	29
ředitel 'director'	26	vocative	12
Marie	5	vocative	5
náměstek 'deputy'	13	vocative	6
doktor 'doctor'	6	vocative	5
předsedkyně 'chairwoman'	5	vocative	4
Baláš	8	vocative	0
úředník 'bureaucrat'	15	vocative	0
prominout 'excuse'	9	imperative	9
děkovat 'thank'	6	1pers	6
běžet 'run'	8	imperative	4
dovolit 'let'	5	2 pers	2
		imperative	2
přeložit 'translate'	10	2 pers	1
prosit 'ask'	11	1pers	11
vydat 'issue'	0	2 pers	1
žádat 'request'	5	1pers	2
	5	2 pers	1
ty/vy 'you'[6]	55	all forms are relevant	55
tvůj/váš 'your'	8	all forms are relevant	8
můj/náš 'my, our'	27	all forms are relevant	27
Total (relative frequency per 1000)	281 (80)		203 (58)
Baláš (total number of tokens in the text: 2989)			
Kubš	31	vocative	29
Šuba	5	vocative	4
Helča	5	vocative	5
náměstek 'deputy'	9	vocative	3
kolega 'colleague (masc.)'	21	vocative	17
ředitel 'director'	11	vocative	17
úředník 'bureaucrat'	6	vocative	0
běžet 'run'	6	imperative	6
přiznat 'acknowledge'	5	imperative	5
slyšet 'hear'	10	imperative (poslyš,	4

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6. The distinction between *ty* and *vy* is beyond the scope of this paper and is not discussed here. We argue here that both *ty* and *vy* constitute a signal of contact regardless of different indexing functions.

Table 1: Continued

Keylemmas with addressee-potential directed function	Total frequency of relevant keylemmas	Word forms for addressee-directed communication	Frequency of the word forms used for addressee-directed communication
Baláš (continued)			
vydat 'issue'	5	No relevant forms	0
ty/vy 'you'	10	all forms are relevant	10
tvůj/váš 'your'	15	all forms are relevant	15
Total (relative frequency per 1000)	139 **(47)**		115 **(38)**
Perina (total number of tokens in the text: 1597)			
Kalous	10	vocative	10
úředník 'bureaucrat'	15	vocative	0
říci 'say'	24	imperative	3
Total (relative frequency per 1000)	49 **(31)**		13 **(8)**

word forms. Addressee-directed word forms are used to establish the speaker-addressee relation in the speech event, to solicit reactions from the addressee, to make a request or to order the addressee to take some action, or to draw the addressee's attention: we operationally selected the first- and second-person pronouns, the second-person forms of verb finite forms, the first-person forms of verb finite forms of a limited group of verbs (e.g. thanking and requesting), the vocative case, and the imperative mood.

It is important to note that "prominence" is a technical term: it is calculated by a combination of statistical significance tests and DIN (Difference Index (Fidler and Cvrček 2015) and is not identical to frequency (cf. Appendix 1 for the full list of keylemmas for each character). Prominent lemmas reflect those words that are more striking and unexpected against the background of general language use. In contrast, words of high frequencies *without prominence* are not expected to reflect what is distinct about the text. Lemmas that could be considered to be addressee-directed are therefore not considered unless they are prominent.[7]

Gross, Baláš, and Perina are compared in terms of addressee-directedness in the table below.

The number of addressee-directed word forms is the highest for Gross (58 per 1000 tokens), followed by Baláš (38) and then by Perina (8). Gross uses more diverse keylemmas than the other two speakers (cf. types of lemmas

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7. This applies to lemmas such as *ano* 'yes' in Perina's text, although this word is involved in maintaining the contact. The word is not among the keylemmas.

used in the vocative and in the imperative mood). With respect to personal pronouns, both the first and the second person forms are prominent in Gross's text, unlike Baláš's text (only the second person pronominal forms are prominent) and Perina's text (neither the first person nor second person pronominal forms are prominent). Furthermore, based on the full list of keylemmas we may conclude that Gross's text can be considered to be more dynamic than the other two; the former contains twice as many types of prominent verbs as Baláš's text and eight times more than Perina's text. Gross's language represents the most "involved" or "dynamic" register (Biber 1988: 105; Cvrček et al. 2018). Perina's language represents the other extreme, and Baláš's language is in the middle of the scale.

Willingness to reach out to interlocutors also seems to decrease once one masters Ptydepe. Some of the Ptydepe speakers cannot or are not willing to switch back to a natural language for the sake of accommodating a non-Ptydepe-speaking addressee in communication:

(1) Kunc [...] A všechny údaje o jednotlivých úřednicích jsou přitom zanešeny už dávno daleko přesněji a bez subjektivního zexdohyt—promiňte, pohledu—(Havel 130)

'Kunc [...] And all the details about individual officials are at the same time entered already long ago in a far more precise manner and without subjective zexdohyt—excuse me, perspective.'[8]

(2) Kunc [...] nezlobte se, jsem zvyklý mluvit v ptydepe, v živém jazyku pak těžko hledám slova—(Havel 129)

'Kunc [...] please excuse me, I'm used to speaking Ptydepe, then I have a hard time looking for words in a natural language.'

In contrast to Gross, who is the least competent and least willing to accept Ptydepe, the expert who is expected to be most knowledgeable, competent, and loyal to the language is Perina.

Apart from containing few addressee-directed expressions, Perina's language use can be characterized as the most static among the three main characters in the following table. Below the three characters' texts are compared to three different corpora: SYN2015, Oral v1, and Speeches (the political addresses, written to be spoken, of all the Czechoslovak and Czech presidents).

The first observation is that Gross, Baláš, and Perina occupy an intermediate position between spoken and written language in terms of its dynamics (Cvrček et al. 2018). The table below summarizes the prominence (DIN) of these POS (parts of speech) categories.

Positive DIN values mean overrepresentation of the category (in comparison to a reference corpus) whereas negative DIN values indicate lower-than-expected usage.

The values show that Gross, Baláš and Perina use more nouns and adjec-

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8. The translations are by the authors of this article. They are not intended to be artistic translations but to show the linguistic features discussed.

Table 2. Prominence of major POS categories (nouns, adjectives, verbs) for Baláš, Gross and Perina against three reference corpora: SYN2015, Oral v1, Speeches.

Reference corpus	SYN2015			Oral v1			Speeches		
Difference Index (DIN)	Baláš	Gross	Perina	Baláš	Gross	Perina	Baláš	Gross	Perina
nouns	-21,13	-20,14	-5,79	23,42	24,40	37,58	-20,84	-19,85	-5,49
adjectives	-26,79	-23,73	7,83	26,49	29,49	55,42	-41,74	-39,01	-9,13
verbs	16,71	14,19	-8,04	8,50	5,93	-16,26	22,16	19,69	-2,39

tives than expected in informal spoken discourse (see comparison with Oral v1 corpus), but fewer when compared to written texts (SYN2015). Since written speeches (as represented by the reference corpus Speeches) are more like written texts (in terms of the distribution of POS categories), it is not surprising that the three characters of *Memorandum* represent fewer noun-prominent positions. What is striking, however, is that verbs are consistently prominent in both Baláš's and Gross' texts regardless of the reference corpora, unlike Perina's texts. In contrast, DIN values for adjectives and nouns are consistently higher for Perina relative to the other two speakers. In other words, Perina's texts are more descriptive and static than the other two.

Prominence of addressee-directed expressions and parts of speech line up with the speaker's competence in Ptydepe: Gross does not know the language, while Perina is an expert; Baláš is somewhere in between. The quantitative data suggest that Gross engages with the addressee most, followed by Baláš, and then Perina the least. Gross also shows more diverse means of addressee-directed expressions than the other two characters. The POS distribution suggests degrees to which a text is static; Perina's text is more static than the others.

The data from this section shows a relationship between L1 use (Czech) and Ptydepe use. Higher proficiency in Ptydepe is associated with static-descriptive discourse (Perina). Lower proficiency in Ptydepe is associated with more prominence in addressee-directed linguistic features in L1 (Gross). At the same time, Gross and Baláš are similar in their less prominent use of nouns and adjectives, in contrast to Perina. This similarity indicates that these two former characters are fundamentally not far from each other in their characteristics; in fact, as the play unfolds, it becomes clear that neither of them is capable of changing the system: Baláš introduces yet another artificial language, and Gross does not resist Baláš.[9]

This section showed the parallel relationship between proficiency in Ptydepe and L1 language use among the three major characters of the play: Gross, Baláš, and Perina. The data show how Perina's discourse is distinct

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9. See Havel's critical remark on Gross (1983/1999: 400).

from the other two characters. The following section will further examine the relationship between Perina's role as the authority on Ptydepe and his discourse style in L1, and discuss how these two components of the play contribute to the characterization of Ptydepe.

5. Perina's discourse style in L1 and its relationship to Ptydepe

As the instructor of and the authority on Ptydepe, Perina's role and his speech in his L1 can be considered to be closely associated with Ptydepe.[10] While Perina's speaking style may seem simply pedantic and may seem to follow the register of a teacher, it in fact shares prominent features with speeches from the socialist (totalitarian) period at its core. The distinct features of Perina's discourse could be seen as constituting a dormant version of what is highlighted in Ptydepe.

5.1. Obfuscation of agency of events and states

As the teacher of and authority on Ptydepe, Perina introduces Ptydepe as a language founded on a "strictly scientific basis":

(3) Ptydepe, jak víte, je jazykem syntetickým, budovaným na přísně vědeckém základě, s maximálně racionální gramatikou a neobyčejně rozsáhlou slovní zásobou. (118)

'Ptydepe, as you know, is a synthetic language, built on a strictly scientific basis, with a maximally rational grammar and with unusually extensive vocabulary.'

Perina's descriptive presentation of Ptydepe is characteristic of academic discourse and can be found reflected in Table 2: nouns are prominent, while finite verb forms are not. Closer observations of Perina's discourse indicates that such nouns are frequently nominalized states and events:

(4) Pro úřední styk nejzávažnějším nedostatkem přirozených jazyků je přitom **nespolehlivost**, vyplývající z nedostatku **jednoznačnosti** a **nezaměnitelnosti** jejich základních stavebných jednotek—slov. (Havel 118)

'For administrative contact, the most serious shortcoming of natural languages is **unreliability**, resulting from the lack of **clarity** and of **un-interchangeability** of their basic building blocks—of words.'

Nominalizations are not specific only to academic discourse. They are frequently used to manipulate information (Fairclough 12–13). Nominalized events do not explicitly report who is responsible for actions or who other participants are. Nominalization can also lead to confusion when modified by a genitive case form: e.g., the genitive form in *šikanování kamaráda^{gen}* 'bul-

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10. Characterizing Perina with an unusually teacher-centered style is likely to be an intentional choice over the potential alternative: the style of a more addressee-directed "teacher-facilitator" who treats a student as a discussion partner. Note the scene in which Perina continues to teach Ptydepe even after the one and only student has been expelled from the classroom; addressee-directed communication is strongly suppressed in Perina's discourse. This image of a unilateral communicator is consistent with the functions of Ptydepe (cf. Section 6).

lying of a friend^[gen]' could be interpreted as either the subject (agent) or the object (patient).

Perina's discourse style is reminiscent of socialist political speech discussed in Fidler and Cvrček (2019). This study compared the statistical prominence of parts of speech and grammatical forms used by Czechoslovak/Czech presidents from 1918–2015 (https://wiki.korpus.cz/doku.php/cnk: speeches). It reports that prominent parts of speech and grammatical morphemes help us to understand the type of discourse. One of the findings is that the socialist presidents' speeches are characterized by prominence of nouns, adjectives, and attributive genitive case and simultaneous suppression of finite verb forms. The combination of these features represents situations as though they were self-emerging (without explicit participants) and/or established "facts."[11] Compare the following examples.

(5) Je to cesta dalšího **upevňování** míru, **bezpečnosti** a **rozvoje** plodné mezinárodní **spolupráce**. (Husák 1975, New Year's Address)

'This is the way of further **consolidation** of peace, **security** and **development** of fruitful international collaboration.'

(6) [...] **upevňujeme** demokratický politický řád a **rozvíjíme** naši mladou tržní ekonomiku. (Havel 2003, New Year's Address)

'[...] [**we**] **consolidate** the democratic political order and [**we**] **develop** our young market economy.'

In contrast to (6) by Havel, example (5) (from the speech by the socialist president Husák) contains nominalizations without entities-individuals that are responsible for the actions, creating the impression that the situations emerged on their own.

In addition to nouns, passive voice is also expected in academic discourse (Biber and Conrad 117, Cvrček et al. 2018). Perina's text is consistent with this tendency:

(7) Jednoduše: písmena **jsou prokládána** i uvnitř slova tu a tam mezerami, takže slovo **je tvořeno** potom vlastně určitým větším nebo menším počtem takzvaných podslov. [...] Slovní zásoba ptydepe **je** totiž **budována** podle zcela logického principu: čím obecnější význam, tím kratší slovo. (Havel 120)

'Simply put: the letters **are interlaced** even inside the word with spaces here and there, so the word **is formed** then actually by a certain number of larger or smaller so-called subwords. [...] The vocabulary of Ptydepe is actually built on a completely logical principle: the more general the meaning, the shorter the word.'

Passive voice, however, can simultaneously be used to represent participants of an event in different ways. Passive voice makes it possible to omit the actual agent responsible for the event; the grammatical subject of a passive

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11. Again, mere presence of grammatical features does not mean that they are prominent with respect to the entire text.

voice could be implicitly represented as a victim of an action (Fairclough 145-150). This construction is prominent[12] in socialist speeches in Czech (Fidler and Cvrček 2019: 64). Compare the following two examples:

(8) V říjnu 1945, v prvém roce osvobození, **bylo vyhlášeno** znárodnění valné části průmyslu a všeho bankovnictví. V říjnu 1946 **byl vyhlášen** dvouletý hospodářský plán na léta 1947 a 1948. (Gottwald, 1948, Republic Day)

'In October 1945, the first year of the liberation, the nationalization of much of the industry and all of banking **was announced**. In October 1946, a two-year economic plan for 1947 and 1948 **was announced**.'

(9) Před rokem **jsem řekl**, že si v brzké době zvolíme Senát. Senát dodnes nemáme. **Vyzývám** proto náš Parlament, aby přijal příslušný volební zákon a umožnil tak jeho zvolení. (Havel, 1995 New Year's Address)

'A year ago, [**I] said [we] would elect** the Senate soon. **We** still **don't have** the Senate. I therefore **I call on** our Parliament to adopt the relevant electoral law and to enable the election.'

The passive voice in (8) does not specify who announced collectivization, nor the two-year economic plan, in contrast to the active voice in (9) in which the speaker explicitly presents himself as the agent of the actions.

Nouns and passive voice in Perina's speech point to a double function: while they are indeed typical of academic discourse, they are simultaneously features that could be mobilized to blur the participants of events. Similarities between Perina's discourse and socialist speeches cannot be considered accidental since socialist rhetoric and its impact on life are one of the fundamental points made by Havel (1978/1999).

5. 2. Use of modifiers

Adjectives are yet another part of speech that distinguishes Perina's discourse from that of the other characters, as seen in Table 2. Adjectives, like nouns, are characteristic of academic discourse, which tends to be descriptive (Biber and Conrad 241, Cvrček et al. 2018). Adjectives, however, also contribute to prolonging phrases, thereby cluttering the text. Such tendencies are found in socialist speeches. The presence of adjectives specifies entities, but they also become automatic (semantically bleached) and make noun phrases automatically long. For example, *společenství* 'community' is nearly always modified by the adjective *socialistický* 'socialist'. *Hrozba* 'threat' is frequently modified by the adjective *válečný* 'of war' and *vzájemně výhodný* 'mutually advantageous' nearly always modifies *spolupráce* 'cooperation'.

(10) Spolu se státy socialistického **společenství** vedeme v současné době houževnatý zápas za odvrácení **válečné** hrozby, [...] (Husák 1986, NYA)

'Together with the states of the **socialist** community we nowadays carry out a persistent struggle for avoidance of the threat **of war** [...]'

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12. Prominence is measured by Difference Index (Fidler and Cvrček 2015) rather than by frequency. We therefore do not claim that there was no passive voice in non-socialist speeches.

(11) Chceme i nadále udržet a rozvíjet dobré vztahy a **vzájemně výhodnou** spolupráci se všemi státy. (Husák 1975, NYA)

'We continuously maintain and develop good relations and **mutually advantageous** cooperation with all countries.'

Unusual length is a distinct feature of Ptydepe texts. Texts in Ptydepe are taken to the extreme, producing a densely written 36-page text for what should be a short summons to the military office (Havel 189).

In addition to adjectives, nouns in Perina's text are often modified by adnominal genitive case forms. This is another feature that is consistent with academic discourse (cf. observation of prepositional phrases after nouns (Biber and Conrad 116, Cvrček et al. 2018)). Part of (3) is reproduced below:

(12) [...] z nedostatku **jednoznačnosti[gen] a nezaměnitelnosti[gen] jejich základních stavebných jednotek[gen] — slov.[gen]**

'from the lack **of clarity[gen]** and **of uninterchangeability[gen] of their basic building blocks[gen] — of words[gen].**'

Use of the adnominal genitive is also prominent in socialist speeches (Fidler and Cvrček 2019: 18). Certain lexical items in the genitive case nearly always modify specific nouns (*upevňování **bratrského svazku[gen] Čechů a Slováků-[gen]*** 'consolidation **of brotherly union[gen] of Czechs and Slovaks[gen]**', *rozvoj **socialistického společenství[gen]*** 'development of the socialist society 'development', and *prohlubování **socialistické demokracie[gen]*** 'deepening **of socialist democracy[gen]**' (SPEECHES)). Below are some examples of stacked genitive nominal phrases:

(13) [...] zdravím jménem **ústředního výboru[gen] Komunistické strany[gen] Československa[gen] , ústředního výboru[gen] Národní fronty[gen], československé vlády[gen]** i jménem svým. (Husák 1985)

'[...] I greet in the name **of the central committee[gen] of the Communist Party[gen] of Czechoslovakia[gen], of the central committee[gen] of the National Front[gen], of Czechoslovak government[gen]** as well as in my own name.'

The frequent attributes are prefabricated chunks of text. They are a compulsory part of automatic ornamentation, leading to erosion of meaning. This feature, shared by Perina's discourse and socialist speeches, can be seen as mimicked and exaggerated in Ptydepe, which produces long automatic sequences of words. Perina's discourse in L1, which uses devices similar to those found in socialist discourse, can be considered to contain latent features that are made more explicit in Ptydepe.

5. 3. Summary

This section examined Perina's discourse and how it relates not only to academic discourse but also to socialist discourse. By comparing Perina's discourse to socialist speeches, we showed how Perina's prominent linguistic fea-

tures could be potentially applied to obfuscation of responsibility and automatization of text. Ptydepe, for which Perina is the authority, can be interpreted as a language in which Perina's discourse features are taken to the extreme.

Admittedly, the essential properties of Ptydepe are not merely applicable to socialist discourse. "Alternative news" such as that found in *Sputnik Czech Republic* typically selects those aspects of events and situations that implicitly produce images that are politically motivated (Fidler and Cvrček 2018). Similar ideological spins in media are discussed by Fowler. Obfuscation of agency and power maintenance in discourse are reported in other types of discourse (Van Leeuven, van Dijk 40). Nonetheless, socialist texts from Czechoslovakia were likely to be the most accessible source of inspiration for the author and it is expected that Havel used his language experience based on the socialist speeches of his time to highlight the properties of Ptydepe.

This section examined Perina's L1 discourse features that are shared by manipulative discourse. Examples from socialist presidential speeches were discussed for comparison and illustration. The following section will explore the nature of Ptydepe based on the metalinguistic comments on the language, and will further pursue the association between Ptydepe and manipulation of power.

6. Interpretation of metalinguistic comments: Power relations in Ptydepe

Anecdotal metalinguistic comments by Perina, the play's Ptydepe specialist and language instructor, illuminate some salient properties of Ptydepe. According to Perina, Ptydepe words of the same length differ by minimally 60% of their letters; for example, two of the ten-letter-word Ptydepe translations of *baf* (an interjection used to startle or frighten people in Czech), *gedynrelom* and *osonfterte*, share only one letter in the same position (the 7th letter e) (Havel 142). This interjection has six translation equivalents in Ptydepe. The translations are based on several interactional features, which are summarized in Table 3: the intention of the pretended threat (2abc), the relative hierarchy between the speaker and the addressee (3ab), and the anonymity of the speaker (1a).

All six translations share a common property: the relative power relationship between the speaker and the addressee. The physical advantage of the speaker relative to the addressee (whether the speaker is hidden to the addressee) differentiate *gedynrelom* and *osonfterte* **vs.** *eg gynd y trojadus* and *eg jeht kuz*. Use of *ysiste etordyf* or *yxap tsaror najx* depends on the speaker's rank versus that of the addressee; use of the interjection by the subordinate to the superior, however, is limited not only by the power hierarchy but also by time. Use of language on specific days evokes a religious calendar (e.g. in Japan) in which some days are not intended for certain actions such as weddings and starting new businesses. The similar language practice seen in Pty-

Table 3. Differences among the four Ptydepe words corresponding to *baf* (S=speaker, A=addressee)

Expression of 'pretended threat'	1a. S hidden	1b. A hidden	2a. intention: not a surprise to A	2b. intention: joke to A	2c. intention test of vigilance to A	3a. S is superior to the addressee	3b. S is subordinate to the addressee (limited to specific days)
gedynrelom	+	−	−				
osonfterte	+	−	+				
eg gynd y trojadus	−			+	(−)		
eg jeht kuz	−			−			
ysiste etordyf			(−)	(−)	+	+	−
yxap tsaror najx						−	+

depe could be connected with implicit reference to power beyond that of the interlocutors.[13]

Degrees of the speaker's psychological encroachment on the addressee are also related to power relations. *Eg gynd y trojadus* is a joke; *eg jeht kuz* is not a joke (a more serious act), and *ysiste etordyf* explicitly tests the addressee's vigilance. These three words all entitle the speaker to impose on the addressee (the speaker is empowered to joke or to test the addressee), without allowing the addressee any room for negotiating the interpretation of the interjection.

Starting the first lesson with a word such as *baf* is in and of itself significant. Perina introduces in all seriousness this particular interjection to produce precision in the activities of scaring and startling the addressee. The interjection is used for nonsensical or dishonest maneuvering to gain the upper hand over the addressee.[14] At the same time, another use of this interjection—horsing around—suggests the absurdity of using the language in bureaucratic communication.[15]

It is significant that the first Ptydepe lesson opens with the use of the grammatical category of what Czech grammars call "citoslovce (interjekce)" (Rusínová and Nekula 356–58 and Cvrček et al. 2010: 299–300). This category includes interjections and onomatopoeia. In fact, *baf* has both sound symbolic functions (imitating a dog barking) and contact functions (scaring the addressee). Such words largely lack grammatical marking for

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13. The authors would like to thank one of the two anonymous referees for this observation.

14. Introducing an interjection to produce "precision" in scaring and startling the addressee is also a manifestation of the ridiculousness of this language.

15. The authors would like to thank both of the anonymous referees for this point.

agency[16]; when they represent events, interjections can divert attention away from the specificity of events and the identity of the participants of the events.[17]

(14) Politika osciluje ode zdi ke zdi a otlouká si svou už i tak dost postiženou hlavu o dvě protilehlé zdi, a ještě svůj těžký otřes mozku vydává za pragmatický přístup. [...] Tak to je ten zmatek, oscilace a nevypočitatelnost české politiky. Zbytečno mluvit o našich politických postojích k Evropské unii. Zeď, **bum**, druh. zeď, **bác**![18]

'[Czech] politics oscillates from a wall to another wall and is banging its already afflicted head against two opposing walls, and it even presents its grave concussion as a pragmatic approach. [...] So this is this disorder, oscillation and unpredictability of Czech politics. It is useless to talk about our political positions towards the European Union. A wall, **bum**, the second wall, **bác**!' (example cited in Fidler 2019:221)

The political situation is depicted as an almost self-moving "oscillation" and it is represented by the expressions *bum* and *bác*, which are normally associated with loud hitting sounds. The text does not specify complex debates among specific politicians, cabinet ministers, nor different agendas of various political parties, and varying opinions of interest groups. Czech politics is represented as though it were a single monolithic entity. The simplistic image appeals to emotions rather than analysis of facts.

Ptydepe is particularly remarkable in that it is subject to the principle of power relations: who has advantage over the other, who is entitled to determine the intent of the action, and who is superior to the other. The decision to build the relative power relationship into those expressions that are least likely to mark speech participants in natural languages is indicative of the general principle used to build Ptydepe: it is not only created to increase precision as it claims to do, but to systematically extend encoding of power relations into wider areas of language.

Power relation in Ptydepe is symptomatic in its actual use by the characters within the play. Ptydepe is monopolized by a small clique of users and is used to exclude Gross, the managing director:

(15) Gross   Ms. Helena—
      Helena   Abagan fajfor! Yes?
      Mašát   Fajfor? Nu rachaj?
      Gross   You will issue the materials only when the official has the memorandum
               translated—

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16. Agency here refers to the explicit grammatical marking of the subject of *an action*. Admittedly, not all verbs govern the grammatical subject, but the subject is expected of the prototypical verbs: those that report dynamic physical actions (Hopper and Thompson 1984, 1985) or processes (Langacker 1999/2002).

17. The syntactic properties of verbs derived from onomatopoeia (with the suffix *-nou-*) also tend to suppress major participant roles (who is doing something to someone), presenting a situation as if emerging on its own (Fidler 70)

18. http://zpravy.e15.cz/byznys/pravo-a-byznys/normativni-zaklady-nasi-civilizace-penta-teuchpro-politiky-a-pravniky-968013, accessed August 24, 2017.

Kunc	Rachaj gun.
Helena	Gun znojvep?
Mašát	Znojvep yj.
Kunc	Yj rachaj?
Helena	Rachaj gun!
Mašát	Gun znojvep?
Kunc	Znojvep yj.
Helena	Yj rachaj?
Mašát	Rachaj gun!
Kunc	Gun znojvep?
Gross	(Shouts) Quiet! (Havel 181-182)

The speakers of Ptydepe totally ignore the presence of Gross, leaving him astray in the conversation. The circularity of their interactions represents an unbreakable repeated loop that leaves Gross outside. This can be seen as a representation of Ptydepe as an unbreakable and repeating automatic flow of utterances and as a means to build a power structure (a circle) to which only some selected members belong.

Ptydepe, in addition, does not merely interact with the power relations of the speech participants themselves. The language itself is to be revered:

(16) [...] bez **nezlomné víry v ptydepe** se ptydepe ještě nikdy nikdo nenaučil. (118)

'[...] without **unbroken faith in ptydepe**, no one has ever mastered ptydepe yet.'

The abandonment of Ptydepe is inevitable, as the "language" has little to do with the basic properties of a natural language. The difficulty of learning the language has already been shown above, but it is also evident from the met-alinguistic comments that are scattered throughout the play. The Ptydepe translators admit that "no one has mastered Ptydepe properly yet" (118). The classroom scenes with the Ptydepe teacher Perina and his students indicate that there are no more new Ptydepe learners. The class starts with four officials who are learning the language, later reduced to one (Kalous) and finally zero. Perina, however, continues to teach the language in an empty classroom (164). The classroom scene is indicative that Ptydepe, besides being difficult to learn, is conceptualized as a "language" without an interlocutor, as this feature will be further examined below. This one-sided function of Ptydepe obviously leads to complications.

As the play progresses, it becomes clear that it is impossible to translate texts from a natural language into Ptydepe because the fundamental functions of the two differ. Authors of texts are "not able to pin down/do not agree on" what they mean in their natural language, causing a tremendous backlog of translation into Ptydepe (167–68). This is hardly surprising since meanings are often negotiated and repaired between interlocutors in natural languages (McRoy). Meaning in Ptydepe is intended to nail down every meaning uni-laterally, not requiring interlocutors. Ptydepe is a language without speakers and speech situations.

The play suggests that both the general lack of proficiency in Ptydepe and the monstrously cluttered texts generate suspicion. This is to be expected, considering that Ptydepe is built to reflect power relations. An unverified rumor (sourced from a bakery outside the official work place) spreads that an unknown text might be a letter of protest (160–61), information that immediately alarms Baláš. This passage suggests that Ptydepe is subsequently replaced not only because of its dysfunctionality and un-learnability but also because of fear that the language could be used against those presently holding power.

The consequences of Ptydepe use, however, seem to go beyond these features when we look at how Ptydepe develops in the play. The definition of "meaning" in Ptydepe is subsequently stretched to apply to each word use at a specific juncture of text (extreme context-sensitive meaning); thus, every single occurrence of a word from a natural language must be translated differently.[19]

(17) Perina: [...] Jiným zhoubným úkazem byly některé stylistické konvence, které v údobí ptydepe vznikly: snaha o maximální nepodobnost mezi následujícím a předchozím, [...] (Havel 189)

'Perina [...] Another malignant phenomenon turned out to be some stylistic conventions that emerged in the history of Ptydepe. An attempt to maximally differentiate between the following and the preceding, [...]'

If this principle were to be consistently applied, any topic word in a text that appears more frequently than expected in a natural language would be translated into Ptydepe differently every time it appears in a different part of the text, since the same word would presumably interact with a slightly different context as the text progresses. A coherent text in a natural language is expected to contain a certain group of topic words; the more coherent the text in a natural language, the more cluttered and the longer is the text when translated into Ptydepe. As the topic word would become unrecognizable from one instance to another, the unifying ideas associated with the topic word would become diluted and the comprehension of the text impeded.

Once a strict connection between the extreme context-sensitive meaning and a specific Ptydepe word is established, the flow of discourse must then follow a prescribed pattern to match each Ptydepe word. Consequently, organization of text becomes predetermined with no flexibility for alternative text progression. Authors are then faced with two choices: either to follow these conventions and write the text in one prescribed manner like an automaton, or to abandon writing all together:

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19. Different functions of the same word, when repeated, are discussed by Tannen. The stylistic conventions to differentiate word use in Ptydepe are therefore not completely unfounded; the discourse effects are actually produced because the same words or expressions (rather than different ones) are repeated.

(19) Perina [...] snaha o maximální nepodobnost mezi následujícím a předchozím, z níž tyto konvence vyrůstaly, omezovala stále víc možnosti dalšího pokračování textu, až v určitých případech buď mohl text pokračovat vždycky už jen jedním možným způsobem, takže jeho autor ztratil jakýkoli vliv na své sdělení anebo prostě nemohl pokračovat vůbec. (Havel 189–90)

'Perina [...] An attempt to maximally differentiate between the following and the preceding, which gave rise to these conventions, was increasingly limiting the possibilities of continuing the text further, to the point where in certain instances the text could either continue always only in a single possible way so that its author could no longer influence his message or was simply unable to continue at all.'

Perina's metalinguistic statement suggests that Ptydepe can not only clutter texts and prevent consistent discourse, but can also lead to automatic production of text without possibilities for deviation. This leads to abandoning language production, ultimately silencing any type of voice.

7. Conclusions

Ptydepe is clearly not a language like Esperanto that has been created to improve communication. The text of the play itself demonstrates its un-language-ness both quantitatively and qualitatively, directly from what we can observe in the language sample and indirectly from the metalinguistic description of the language as well as the discourse features of L1 use in the play. In other words, rather than being a replacement language, Ptydepe is in fact an "extract" of the main features of a manipulative language used to maintain the status quo.

The following features of Ptydepe were identified:

1. Ptydepe crowds out and obscures the content of a text, with maximally redundant components being inserted to make the content opaque.
2. Ptydepe prevents speakers from deviating from an automatic discourse progress.
3. Ptydepe is used as a language to exclude others, thereby delegating power only to a small group of speakers.
4. The way in which Ptydepe differentiates meanings is closely associated with power relations between speech participants.
5. Ptydepe incapacitates speech production.

To the extent that Ptydepe exaggerates the features of manipulative language, it may be perceived not as a language but as an alternative semiotic system, which incapacitates its users from delivering content other than what is conventionalized (and therefore permitted). By taking the features of manipulative language to a breaking point in this manner, Ptydepe points to language use that may seriously affect the fundamental human ability to create discourse, leading to a state in which society's functions become automated and subject to control.

The observations are consistent with Danaher's statement (Danaher 141–42) that Havel's writings reframe the notion of the generally accepted view of the distinction between the socialist East and the democratic West. According to Havel (Moc 229), the societies from these two worlds are founded on the same consumerist-industrialist value system. In his view, the East (which Havel describes as "post-totalitarian") is "a caricature of the sharpened picture of the modern life in general," revealing to the West the latter's "latent direction" (246). Elsewhere, Havel (Poznámka 400) explicitly states that *Memorandum* does not specifically pertain to Czechoslovak history, but describes human nature and society.

This article, however, explores not so much *what* Havel's ideas are, but rather *how* Ptydepe functions in a way that embodies Havel's ideas. The study therefore focused on the language data that can be extracted from *Memorandum*: the Ptydepe texts, metalinguistic comments about Ptydepe, prominent features of L1 use by the characters and its relationship to proficiency in Ptydepe. Both qualitative and quantitative data show the mechanism by which language can be manipulated to the point of sheer automation; Ptydepe exposes the extreme essence of the socialist language, which in turn reveals features of a more subtle manipulative language found elsewhere, including in a democratic political system.

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Appendix 1

Keylemmas found in text lines spoken by Gross, Baláš and Perina

GROSS Lemma	DIN	BALÁŠ Lemma	DIN	PERINA Lemma	DIN
ptydepový 'of Ptydepe'	100	Kubš	100	ptydepový 'of Ptydepe'	100
ptydepe	99.9983	ptydepe	99.999	ptydepe	99.9989
Baláš	99.9856	Šuba	99.9889	redundance 'redundancy'	99.985
vyrozumění 'memorandum'	99.9595	Helča	99.9864	Kalous	99.9782
razítko 'stamp'	99.0543	Kunc	99.8319	citoslovce 'interjection, onomatopoeia'	99.9703
zavádění 'introduction'	98.8022	evidenční 'reference' (adj)	99.7776	předstíraný 'pretended'	99.6661
kolegyně 'colleague (female)'	98.5557	sešit 'notebook'	99.1551	ego	99.4744
pozorovatel 'observer'	98.5501	razítko 'stamp'	98.7022	ohrožení 'threat'	99.0646
předsedkyně 'chairwoman'	98.4429	příkaz 'order'	97.759	úředník 'official'	98.9281
přeložit 'translate'	98.1083	úřední 'official'	97.1949	úřední 'of business, official'	98.7607
sešit 'notebook'	97.8508	náměstek 'deputy'	97.1775	kterýkoli 'whichever'	98.6478
náměstek 'deputy'	97.7195	kolega 'colleague' 9	6.436	písmeno 'letter'	98.3522
úředník 'official'	97.6433	povolení 'permission'	96.3508	maximální 'maximum' (adj)	96.4889
kolega 'colleague'	97.4976	pokyn 'instruction'	96.0306	jazyk	95.6264
povolení 'permission'	97.1568	úředník 'official'	94.3583	text	95.5026
příkaz 'order'	97.1398	vina 'fault'	94.2021	přirozený 'natural'	94.4826
překlad 'translation'	96.9262	ředitel 'director'	92.603	význam 'meaning'	94.4428
úřední 'official'	96.7426	chvilka 'moment'	91.8428	slovo 'word'	91.7751
laskavý 'kind'	96.6619	běžet 'to run'	89.8232	smysl 'sense'	85.4014

prominout 'to forgive, excuse'	96.622	tvůj 'your' 2nd	89.6358	pokračovat 'to continue'	84.3176
ředitel 'director'	94.4375	čin 'deed'	88.9639	říci 'to tell'	79.7
rozum 'reason'	92.9202	přiznat 'admit'	87.5872		
děkovat 'to thank'	91.1874	úřad 'office'	87.0315		
prosit 'to ask, implore'	90.5415	přece 'after all'	81.9066		
úřad 'office'	90.1357	ty 'you' 2nd sg	81.1181		
běžet 'to run'	89.8461	slyšet 'to hear'	80.5721		
žádat 'to request'	88.5795	funkce 'function'	80.3272		
material 'material'	86.6131	material 'material' 7	9.6951		
ty 'you' 2nd sg	86.0449	jazyk 'language'	78.7288		
Marie	85.8137	vydat 'to issue'	76.7969		
doktor 'doctor'	85.7083				
aspoň 'at least'	84.3366				
docela 'quite'	83.6714				
dovolit 'to let'	83.2232				
boj 'battle'	81.0196				
jazyk 'language'	79.3025				
přece 'after all'	79.2488				
tvůj 'your' 2nd sg.	78.6879				
zvláštní 'strange'	77.6775				
skutečně 'really'	77.4105				
proč 'why'	75.9607				
vydat 'to issue'	73.4979				
můj 'my'	71.7004				

Abstract

Masako Fidler and Václav Cvrček
In the Name of Scientific Precision: Václav Havel's Ptydepe

In *Vyrozumění* (Memorandum) Václav Havel introduces Ptydepe, an artificial language. In this play, Ptydepe is conceived as a much more "precise" language than natural languages—its grammar is "maximally rational" and its words tend to be long and numerous because they are maximally (redundantly) differentiated from one another. Ptydepe lacks not only homonyms, but also words that are minimally differentiated. Use of this language leads to increasingly long texts and becomes thus unusable. Finally, it is replaced by Chorukor, another artificial language built on similarity, which leads to extreme ambiguity.

This study examines functions of Ptydepe in the play from several angles: direct observation of the Ptydepe texts, the metalinguistic description of the language, the discourse features of the characters' first language (L1), and a comparison between Ptydepe and socialist political speeches. The quantitative analysis of Ptydepe empirically demonstrates the degree to which Ptydepe departs from a natural language. Both qualitative and quantitative data show the mechanism by which language can be manipulated to the point of sheer automation. Ptydepe exposes the extreme essence of the socialist language, which in turn reveals features of a more subtle manipulative language found elsewhere, including in a democratic political system.