STYLOSTATISTICAL INVESTIGATION
OF PERSONAL PRONOUNS IN MODERN ENGLISH

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There is no doubt that a qualitative analysis of particular language styles is important for the overall representation of a language. However, a quantitative investigation is necessary as it is just this way of investigation that reveals the very importance of particular phenomena investigated. We made sure of that in our former papers devoted to the statistical investigation of particular word categories in the style of fiction, in colloquial style and in specialized and scientific style (cf. Krámský, 1967, 1972, 1975, 1981, 1983).

Our present paper concerns the category of personal pronouns. In formal grammatical respect there are no greater or fundamental problems. As far as the cases of personal pronouns are concerned we are in agreement with R. Quirk and S. Greenbaum (1974: 101) who write: "Like nouns, most pronouns in English have two cases: common (*somebody*) and genitive (*somebody's*.) But six pronouns have no objective case, thus presenting a three-case system, where common case is replaced by subjective and objective. There is identity between genitive and objective *her* and partial overlap between subjective *who* and objective *who* (...)". Of a similar opinion are H. E. Palmer and F. G. Blandford (1975: 69): "Five of the personal pronouns and the interrogative and relative *hu:* are the only words retaining different forms for the nominative and oblique cases; *ju:*, *it* and *wan* do not vary for case".

Table 1 (according to R. Quirk and S. Greenbaum, 1974: 102, tab. 4 : 1) shows the state of differentiation of personal pronouns:

Table 1

			personal pronouns	
			subj. case	obj. case
1st pers.	sing.		I	me
	pl.		wo	us
2nd pers.	sing.		you	
	pl.			
3rd pers.	sing.		he	him
			sho	her
		non-person.	it	
	pl.		they	them

Also in our work the subjective and objective cases are differentiated but, moreover, the differentiation between simple and prepositional cases is added.

As material for our investigation we used five samples for each style examined, each sample including 10 000 words. We used the following samples:
Style of fiction: Dickens, Wilde (a), Forster, Golding, Warner.
Colloquial style: Wilde (b), Wilde (c), Rattigan, Stoppard, Osborne.
Specialized and scientific style:

1. Sociology: Elias
2. Archaeology: Woolley
3. Zoology: Buchsbaum
4. Physics: Hatcher
5. Chemistry: Findlay and Williams

The statistical investigation is recorded in tables, each for one individual sample: tables 2—6 for the style of fiction, tables 7—11 for colloquial style and tables 12—16 for specialized and scientific style. The tables show absolute and relative frequencies of occurrence of personal pronouns in subjective case, simple objective and prepositional cases. Total absolute and relative frequency of occurrence of each personal pronoun in the given sample is recorded at the bottom of particular columns.

1. The style of fiction

An overall examination of individual samples will show us that personal pronouns are sensitive indicators of individual style. We can see that the frequency of occurrence of personal pronouns often considerably differs with individual authors.

We will now examine the total number of personal pronouns in particular samples. The greatest number of personal pronouns contains the sample from Wilde (11.55%), followed by Forster (10.16%), Warner (9.20%), Dickens (8.54%), and Golding (6.70%). Thus the difference between the most and the least frequent personal pronoun in the five samples of the style of fiction is 4.85%. Comparing this with some other word categories we see that, e.g., the difference between the greatest and smallest frequency of occurrence of nouns is 10.7% (Ch. Dickens 21.6%, D. H. Lawrence 10.9%), of verbs is 5.9% (17.7% in the work of Rex Warner and 11.8% in the work of D. H. Lawrence), adverbs show the difference of only 1.29% (8.53% in the work of Galsworthy and 7.20% in the work of Dickens). The difference between the greatest and smallest frequency of prepositions is 2.12% (Golding 12.06%, Forster 9.94%), conjunctions show the difference of only 0.58% (Forster 6.29%, Golding 5.71%). Thus individually most stable are, in quantitative respect, conjunctions.

We will now devote a closer attention to particular frequency data. Thus the most frequent personal pronoun in the sample from Dickens (table 2) is *he* which amounts to 20.96% of all personal pronouns of the sample examined. Further follow the pronouns *I* (15.34%), *it* (14.76%), *you* (12.76%); the other pronouns have the frequency below 10%: *him* (9.13%), *she* (6.79%), *they* (4.33%), *them* (3.63%) and *we, us* (1.41% each). The frequency of occurrence of personal pronouns in the sample from Dickens is characteristic of rather a descriptive than direct narrative style.

The most frequent personal pronoun in the sample from Wilde (table 3) is *I* whose frequency of occurrence amounts to 25.97%, followed by the pronoun *you* (19.05%), *it* (17.66%), *he* (12.64%), *him* (6.49%), *me* (6.23%), *we* (3.03%), *they* (2.86%), *them* (2.08%), *she* (1.82%), *us* (1.30%) and *her* (0.87%). We see that the most frequent personal pronouns in the sample from Wilde are *I, you, it* and *he*, the other pronouns having smaller frequency than 10%.

In the sample from E. M. Forster (table 4) the most frequent personal pronoun is *he* (26.18%), further follow *it* (15.26%), *I* (12.01%) and *she* (10.33%). The other pronouns have a smaller frequency than 10%: *they* (8.86%), *you* (8.17%), *him* (4.92%), *we* (4.53%), *her* (3.64%), *them* (3.35%), *me* (1.77%) and *us* (0.98%).

The most frequent personal pronoun in the sample from W. Golding (table 5) is *he* (28.96%) followed by *you* (14.03%), *I* (12.99%), *they* (10.60%), *we* (10.00%); the other pronouns have a smaller frequency than 10%: *them* (8.21%), *him* (7.16%), *it* (5.52%), *us* (1.19%) and *her* (0.15%). The sample does not contain the pronoun *she*.

The sample from Rex Warner (table 6) has as the most frequent the pronoun *I* (similar to Wilde) with the frequency of 38.91%, followed by *he* (11.96%), *me* (10.87%), the other pronouns have frequency below 10%: *it* (8.48%), *she* (8.37%), *her* (4.67%), *we* (4.35%), *you* (3.80%), *him* (2.61%), *they* (2.39%), *us* (2.07%) and *them* (1.52%).

Table 2 (Dickens)

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	131		75	179		58		78	12		37		570
obj. case		32	17		41		23	32		7		19	171
about					2		1					1	4
above					2								2
against					2					1			3
at		1			3								4
before			1		5		1					1	8
behind			1		1			1					3
beside					1								1
between												1	1
by		2	1					1					4
for		1	2		1		2					1	7
from		1			3								4
in								1					1
into					1								1
of		1			2			2		2		1	8
over		1						2					3
round					1								1
through								1					1
to		10	9		4		3			1		1	30
towards					2							1	3
upon		2			3			3		1		3	12
with		2	3		3			2				1	11
within					1								1
Σ abs.	131	51	109	179	78	58	30	126	12	12	37	31	854
%	15.34	5.97	12.76	20.96	9.13	6.79	3.51	14.76	1.41	1.41	4.33	3.63	100.00

Table 3 (Wilde (a))

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	300		167	146		21		120	35		33		831
obj. case		39	21		30		4	50		7		8	159
about								1				1	2
across			1										1
amongst		3			9					1		1	14
at					1								1
behind												1	1
beside		1					1			1			3
between			1										1
by		2	1		1			2		1		1	8
for		3			4					1			8
from			2		2			6		1		2	13
in			2										2
into			6		6			8	2	3		3	28
of		1						3					4
on					1								1
over								1					1
past		1											1
through		18	14		16			6					54
to					1			2	3	1		1	8
towards										1		1	2
upon		1	6		1			1		1		2	11
with		1											1
within													
Σ abs.	300	72	220	146	75	21	10	204	35	15	33	24	1155
%	25.97	6.23	19.05	12.64	6.49	1.82	0.87	17.66	3.03	1.30	2.86	2.08	100.0

Table 4 (Forster)

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	122		64	266		105		99	46		90		792
obj. case		13	13		35		25	43		6		21	136
about					1		1	1					3
across												1	1
among												1	1
around			1										1
at					1		1						2
before							2						2
behind					1								1
by												2	2
for		1			4			1		1		2	9
from		1			2			3				1	7
in							2	1					3
of		1	3		1			2				5	12
on			1		1								2
to		2			2		3	2		2		2	13
towards							1						1
under					1								1
upon					1								1
with		1			1		2	1		1			6
Σ abs.	122	18	83	266	50	105	37	155	46	10	90	34	1016
%	12.01	1.77	8.17	26.18	4.92	10.33	3.64	15.26	4.53	0.98	8.86	3.35	100.00

Table 5 (Golding)

	I	me	you	he	him	her	it	we	us	they	them	total
subj. case	87		88	194			12	67		71		519
obj. case		6	4		25	1	21		3		32	92
about					1							1
after					1							1
against							1					1
at		1			1		1		1		2	6
before											1	1
behind					2							2
beside					1							1
between					1						2	3
beyond					1						1	2
by					3						1	4
for					3				1		2	6
from					1						1	2
in			2									2
of					3		2		2		7	14
on											2	2
over											2	2
to					2						4	6
with					1				1		1	3
Σ abs.	87	8	94	194	48	1	37	67	8	71	55	670
%	12.99	1.19	14.03	28.96	7.16	0.15	5.52	10.00	1.19	10.60	8.21	100.00

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	358		30	110		77		53	40		22		690
obj. case		39	2		10		19	12		11		6	99
about		1						2					3
above							1						1
after										1			1
against												1	1
along							1						1
among										1			1
amongst												1	1
around		1											1
at		15			3		4			1			23
behind		1											1
beside		1											1
for		4	3		1		5			1			14
from		4			2		2						8
in		3			1			1					5
in front of		2											2
into												1	1
of		2			2		1	3				2	10
on							1	1					2
over								1				1	2
past								1					1
round					1					1			2
through								1					1
to		19			3		5	2		1		1	31
towards		5					1			1			7
with		2			1		3	1		1		1	9
within		1											1
Σ abs.	358	100	35	110	24	77	43	78	40	19	22	14	920
%	38.91	10.87	3.80	11.96	2.61	8.37	4.67	8.48	4.35	2.07	2.39	1.52	100.00

Comparing the samples examined we can see that most frequent is *he* in three samples (from Dickens, Forster and Golding); in two samples (from Wilde and Warner) most frequent is the pronoun *I*. This is in agreement with the characteristics of the style of fiction which is dominated by narrative in 3rd or 1st person.

The tables also present prepositional connections with particular personal pronouns. In our corpus of 50,000 words there are 536 (1.07%) prepositional phrases the most frequent of which are the connections of prepositions with the personal pronoun *him* (134), further follow *it* (71), *them* (62), *you* (60) *her* (49) and *us* (30).

The sample from Dickens has 113 prepositional phrases, i.e. 13.23% of all personal pronouns of this sample. Most frequent connections are with prepositions *to* (30), *upon* (12), *with* (11), *of* (8), *before* (8) and *for* (7); the other connections have a smaller absolute frequency than 7.

The greatest frequency of prepositional connections was stated in the sample from Wilde: 165, i.e. 14.29% of all personal pronouns in this sample. Most frequent connections are with prepositions *to* (54), *of* (28), *at* (14), *in* (13), and *with* (11), the other connections having a smaller absolute frequency than 10.

In the sample from Warner we have found 131 prepositional connections, i.e. 14.24% of all personal pronouns contained in the sample. Most frequently used are the connections with prepositions *to* (31), *at* (23), *for* (14) and *of* (10); the other connections have a smaller absolute frequency than 10.

The remaining two authors, Forster and Golding, differ considerably in the use of prepositional connections from Dickens, Wilde and Warner. In the sample from Forster we find 68 prepositional connections, which is 6.69% of all personal pronouns of the sample. Most frequent are *to* (13), *of* (12), the other connections having a smaller absolute frequency than 10. In the sample from Golding we find 59 prepositional connections, which is 8.81% of all personal pronouns of the sample. Most frequent are *of* (14), *for*, *to* and *at* (each having 6 occurences). The sample from Golding has no prepositional connection with *her*.

Finally we have ascertained the proportion between the subjective and objective (both simple and prepositional) cases. Thus Dickens has 570 (66.74%) occurrences of subjective case and 284 (33.26%) occurrences of the objective case. In the sample from Wilde the subjective case has 831 (71.95%) occurrences, the objective case 324 (28.05%) occurrences. Forster and Golding have a very close proportion between subjective cases: Forster has 792 (77.95%) occurrences of subjective case against 519 (77.46%) in Golding. The frequency of occurrence of the objective case is 224 (22.05%) in the sample from Forster and 151 (22.54%) in the sample from Golding. The sample from Warner has 690 (75.00%) occurrences of subjective case and 230 (25.00%) occurrences of objective case.

2. Colloquial style

The frequency of occurrence of personal pronouns in colloquial style is shown in tables 8—13. The greatest number of personal pronouns in this style is found in the sample from Rattigan (15.71%), followed by Osborne (15.60%), Wilde (*An Ideal Husband* 12.71%), Wilde (*The Importance*, 11.73%). A surprisingly small frequency of occurrence of personal pronouns is found in the sample from Stoppard (only 8.95%). The span between the smallest and the greatest frequency of personal pronouns is 6.76% which is nearly 2% more than in the style of fiction.

We will now examine the frequency of occurrence of personal pronouns in particular samples. Thus in the sample from Wilde (*Importance*, table 8) the most frequent personal pronoun is *I* amounting to 39.64% of all personal pronouns of the sample examined. Further follow the pronouns *you* (26.00%), *it* (12.79%), *me* (6.65%), *he* (4.09%), *she* and *we* (2.22% each), *him* and *they* (1.62% each), *them* (1.36%), *her* (1.02%) and *us* (0.77%). Thus most frequent in this sample are the pronouns *I*, *you* and *it*, the other pronouns having a smaller frequency than 10%.

In the other sample from Wilde (*An Ideal Husband*, table 9) most frequent is also *I* but it has a rather smaller frequency than in the first sample from Wilde (33.05% against 39.64%). Further follow the pronouns *you* (26.83%), *it* (13.45%), *me* (7.47%), *he*, *she* (3.62% each), *they* (2.83%), *we* (2.75%), *her* (2.06%), *us* (1.81%), *them* (1.57%), and *him* (0.94%). Thus, most frequent in this sample are the pronouns *I*, *you* and *it*, similarly as in the first sample from Wilde; the other pronouns have a smaller frequency than 10%.

In the sample from Terence Rattigan (table 10) the most frequent personal pronoun is also *I* (35.58%), followed by *you* (28.20%), *it* (14.00%), *he* (7.00%), *me* (4.97%), *him* (2.42%), *she* and *we* (1.97% each), *they* (1.66%), *us* (1.02%), *her* (0.83%) and *them* (0.38%). Again, the most frequent personal pronouns in this sample are *I*, *you* and *it*, the other pronouns having a smaller frequency than 10%.

In the sample from Tom Stoppard (table 11) the most frequent personal pronouns are *I* (29.50%), *it* (20.67%), *you* (19.44%) and *he* (10.73%). The other personal pronouns have a smaller frequency than 10%. They are *me* (4.24%), *him* and *we* (3.80% each), *they* (3.46%), *she* (1.45%), *us* and *them* (1.01% each), and *her* (0.89%). The strikingly small absolute number of personal pronouns in this sample must be explained by a quite different style of Stoppard's play *Jumpers* which contains long philosophical passages causing the inclination to specialized and scientific style.

The most frequent personal pronoun in the sample from John Osborne (table 12) is *I* (25.13%) followed by *you* (24.87%) and *it* (14.49%), the other pronouns having a smaller frequency than 10%: *he* (9.30%), *she* (5.77%),

me (5.70%), *they* (3.46%), *we* (2.82%), *him* (2.37%), *her* (2.18%), *them* (2.12%) and *us* (1.79%).

Comparing all five samples of the colloquial style, we find that the most frequent personal pronoun in this style is *I* whose frequency takes the first place in all samples examined. This is in agreement with the character of this style which is dominated by the first person singular personal pronoun. The second and the third places are taken in all samples by the pronouns *you* and *it*.

Examining the frequency of occurrence of prepositional connections in the given five samples with the total number of 50,000 words, we find there 510 (1.02%) prepositional connections. Most frequent are the connections of prepositions with personal pronouns *you* (134), *me* (117), *it* (98), *him* (53), *them* (41), *us* (38) and *her* (29).

In the sample from Wilde (*Imp.*) we find 108 prepositional connections, i.e. 9.21% of all personal pronouns (with or without preposition) in this sample. Most frequent are the connections of personal pronouns with prepositions *to* (44), *with* and *of* (18 each), and *for* (13), the other prepositional connections having the absolute frequency between 1 and 5.

In the other sample from Wilde (*Ideal H.*) there are 113 prepositional connections, i.e. 8.96% of all personal pronouns of the sample. Most frequent are the connections with prepositions *to* and *for* (29 each), and *of* (22), the other connections having absolute frequency between 1 and 6.

In the sample from Rattigan we find 110 prepositional connections, i.e. 7.00% of all personal pronouns in this sample. Most frequent are connections of personal pronouns with prepositions *to* (28), *of* (27), and *for* (21); the other connections have absolute frequency smaller than 10.

The sample from Stoppard contains only 56 prepositional connections, i.e. 6.26% of all personal pronouns of this sample. Most frequent are connections with prepositions *of* and *with* (10 each), and *on* (7), the other connections having absolute frequency smaller than 6.

The sample from Osborne has 123 prepositional connections, i.e. 7.88% of all personal pronouns of this sample. Most frequent are connections with prepositions *with* (25), *to* (23), *for* (22), and *of* (20), the other connections have absolute frequency smaller than 8.

Examining the proportions between subjective and objective (both simple and prepositional) cases in particular samples we find in the first sample from Wilde (*Ideal H.*) 924 occurrences of the subjective case, i.e. 78.77% against 249 (21.23%) occurrences of the objective case. The other sample from Wilde (*Import.*) has 960 (75.53%) occurrences of the subjective case against 311 (24.47%) occurrences of the objective case. We see that the difference between the two samples from the same author is slight. Terence Rattigan has 1214 (77.27%) occurrences of the subjective case against 357 (22.73%) occurrences

Table 7 (Wilde(b))

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	465		228	48		26		112	26		19		924
obj. case		43	50		9		4	22		5		8	141
about								4				1	5
at		1	1					1					3
before			1										1
by								1					1
for		4	5		1			2				1	13
from		1											1
in					2								2
of		1	4		2		1	5		1		4	18
on			1										1
over					1								1
to		23	8		2		7	2		1		1	44
with		5	7		2			1		2		1	18
Σ abs.	465	78	305	48	19	26	12	150	26	9	19	16	1173
%	39.64	6.65	26.00	4.09	1.62	2.22	1.02	12.79	2.22	0.77	1.62	1.36	100.00

Table 8 (Wilde (c))

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	420		254	46		46		123	35		36		960
obj. case		71	50		8		22	28		11		8	198
about								2					2
against		1					2						3
before								1					1
beside			1										1
between										1		1	2
for		6	11		2			7		2		1	29
from		3	1									1	5
in			1					3		1		1	6
of			8		2			3		2		7	22
on		1	2					1					4
to		11	8				2	1		6		1	29
with		1	5					2					8
within		1											1
Σ abs.	420	95	341	46	12	46	26	171	35	23	36	20	1271
%	33.05	7.47	26.83	3.62	0.94	3.62	2.06	13.45	2.75	1.81	2.83	1.57	100.00

Table 9 (Rattigan)

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	559		352	110		31		132	31		26		1241
obj. case		52	83		23		10	70		8		1	247
about			1		3			2					6
at		2											2
before		1											1
between			1										1
by								1					1
for		8	4		5			1		2		1	21
from		2	3		1			1					7
in		1						1					2
into								1					1
of		2	11		3		1	5		3		2	27
on		1	3										4
over		1											1
to		6	9		3		1	5		2		2	28
with		2	2				1	1		1			7
without			1										1
Σ abs.	559	78	443	110	38	31	13	220	31	16	26	6	1571
%	35.58	4.97	28.20	7.00	2.42	1.97	0.83	14.00	1.97	1.02	1.66	0.38	100.00

Table 10 (Stoppard)

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	264		135	96		13		138	34		31		711
obj. case		26	28		26		5	30		7		6	128
about		1						3		1			5
against		1											1
at		1						1				1	3
before								1				1	2
between			1										1
for		1						2					3
from					1								1
in			1		1			1					3
of			3		2		1	2		1		1	10
on			1		1		2	3					7
over								2					2
to		3	2		3								8
with		5	3					2					10
Σ abs.	264	38	174	96	34	13	8	185	34	9	31	9	895
%	29.50	4.24	19.44	10.73	3.80	1.45	0.89	20.67	3.80	1.01	3.46	1.01	100.00

Table 11 (Osborne)

	I	me	you	he	him	she	her	it	we	us	they	them	total
subj. case	392		317	145		90		138	44		54		1180
obj. case		69	47		21		23	61		16		20	257
about			2		2			1				2	7
after			2									1	3
at		1			1		1	1				3	7
behind		3											3
between										1			1
for		2	5		4		3	5		2		1	22
from							1						1
in								4				1	5
of		2	3		4			3		7		1	20
on								1					1
over			1					3					4
through		1											1
to		6	5		3		2	4		1		2	23
with		5	6		2		4	5		1		2	25
abs. Σ	392	89	388	145	37	90	34	226	44	28	54	33	1560
%	25.13	5.70	24.87	9.30	2.37	5.77	2.18	14.49	2.82	1.79	3.46	2.12	100.00

of the objective case. In the sample from Tom Stoppard we find 711 (79.44%) occurrences of the subjective case against 184 (20.56%) occurrences of the objective case. John Osborne has 1180 (70.64%) occurrences of the subjective case against 380 (24.36%) occurrences of the objective case. On the whole, the proportion between subjective and objective case is quite constant in all samples of this style, the differences between particular samples not exceeding 3.80%.

3. The style of specialized and scientific texts

The frequency of occurrence of personal pronouns in specialized and scientific style is shown in tables 14—16. A characteristic feature of this style is an extraordinarily small number of personal pronouns in comparison with the style of fiction and colloquial style. The greatest number of personal pronouns in specialized style occurs in the sample from physics (table 15): 2.85%, further follows the sample from archaeology (table 13) counting 2.83%, the sample from sociology (table 12) 2.71%, a considerably smaller number of personal pronouns have samples from zoology (table 14) 1.54% and chemistry (table 16) 0.91%. The span between the most and the least frequent use of personal pronouns is 1.94%.

We will now examine the frequency of occurrence of personal pronouns in particular samples of specialized and scientific style.

In the sample from sociology the most frequent personal pronoun is *it* (40.96%), followed by *we* (21.03%), *they* (16.60%), *them* (11.07%), *he* (5.54%), *us* (2.58%), *him* (1.48%), *I* and *me* (0.37% each). Thus most frequent are the pronouns *it*, *we*, *they* and *them*, the other pronouns do not reach 10%. The pronouns *you*, *she* and *her* do not occur in the sample.

In the sample from archaeology the most frequent personal pronoun is also *it* (31.09%), further follow the pronouns *we* (20.85%), *he* (15.55%), *they* (9.90%), *them* (8.13%), *I* (5.65%), *him* (4.24%), *you* (1.06%) and *her* (0.35%). The most frequent are the pronouns *it*, *we* and *he*, the others not reaching 10%. The pronouns *me* and *she* do not occur in the sample.

The sample from zoology has only 5 of 12 personal pronouns; most frequent of them is *it* (40.91%), followed by *they* (40.26%), *them* (11.69%), *we* (5.84%) and *us* (1.30%). The pronouns *I*, *me*, *you*, *he*, *him*, *she*, and *her* are not represented in this sample.

The most frequent personal pronoun in the sample from physics is *it* (34.04%), followed by *they* (25.26%), *he* and *them* (11.23% each), *we* (9.82%), *you* (5.97%), *us* (1.75%), and *him* (0.70%). The pronouns *I*, *me*, *she* and *her* are not represented in this sample.

In the sample from chemistry the most frequent personal pronouns are *it* (70.33%) and *he* (10.98%), the other pronouns having a smaller frequency

Table 12 (Sociology)

	I	me	he	him	it	we	us	they	them	total
subj. case	1		15		90	57		45		208
obj. case		1		1	16		4		13	35
about					1					1
between					1				2	3
by									1	1
for					1		2			3
from									3	3
in									1	1
inside					1				1	2
of									4	4
on									1	1
over									1	1
to				3			1		1	5
towards									1	1
with					1				1	2
Σ abs.	1	1	15	4	111	57	7	45	30	271
%	0.37	0.37	5.54	1.48	40.96	21.03	2.58	16.60	11.07	100.00

Table 13 (Archaeology)

	I	you	he	him	her	it	we	us	they	them	total
subj. case	16	3	44			60	59		28		210
obj. case				7		6		8		8	29
about				1		2					3
above						1					1
amongst						1					1
below										2	2
between										1	1
from						5				1	6
in						1					1
inside										1	1
into				1		4		1		6	12
of						1				1	2
on						1				1	2
over						2				1	3
round				1		2					3
to				2	1	1				1	5
with						1					1
Σ abs.	16	3	44	12	1	88	59	9	28	23	283
%	5.65	1.06	15.55	4.24	0.35	31.09	20.85	3.18	9.90	8.13	100.00

Table 14 (Zoology)

	it	we	us	they	them	total
subj. case	56	9		62		127
obj.	6		1		10	17
about case					2	2
between					2	2
of	1				4	5
to			1			1
Σ abs.	63	9	2	62	18	154
%	40.91	5.84	1.30	40.26	11.69	100.00

Table 15 (Physics)

	you	he	him	it	we	us	they	them	total
subj. case	17	32		72	28		72		221
obj. case				17		2		15	34
about								2	2
after		1							1
between								2	2
for						1			1
in				1				2	3
of				3		2		6	11
on				2				1	3
over				1					1
through				1				2	3
to			1					2	3
Σ abs.	17	32	2	97	28	5	72	32	285
%	5.97	11.23	0.70	34.04	9.82	1.75	25.26	11.23	100.00

Table 16 (Chemistry)

	he	him	it	we	they	them	total
subj. case	10		57	5	4		76
obj. case			4			5	9
by		1				1	2
from			1				1
on			1				1
to		1	1				2
Σ abs.	10	2	64	5	4	6	91
%	10.98	2.19	70.33	5.50	4.40	6.60	100.00

than 10%: *them* (6.60%), *we* (5.50%), *they* (4.40%), and *him* (2.19%). The pronouns *I, me, you, she, her*, and *us* are not represented in this sample.

Comparing all five samples of this style we find that the most frequent personal pronoun is *it* which occurs in all samples examined. This is a characteristic feature of impersonality of specialized and scientific style. Remarkable is also the non-occurrence of a number of personal pronouns. Thus *I* occurs only in one sample (sociology) with a very small frequency of occurrence (only 0.37%). Likewise *me* occurs only in the sample from sociology with the same frequency of 0.37%. The pronoun *you* is found only in the sample from archeology with a small frequency of 1.06% and with a rather greater frequency, 5.97%, in the sample from physics. No representation has the pronoun *she*, whereas the pronoun *her* is represented in one sample, that of archaeology, with a minimal frequency of 0.35%. The pronoun *he* is not represented in the sample from zoology, the pronoun *him* is not present in the sample from zoology, and the pronoun *us* is not represented in the sample from chemistry. Thus poorness in personal pronouns is a significant feature of specialized and scientific style.

The frequency of occurrence of prepositional connections is, in the corpus of all five samples of this style (i.e. 50 000 words) 117, i.e. 0.23%; most frequent of them are the connections of prepositions with the personal pronoun *them* (58) further follow *it* (39), *him* (12), *us* (7) and *her* (1).

In the sample from sociology we find 28 prepositional connections, most frequent of them being those with the pronoun *them* (17), further follow *it* (5), *him* and *us* (3 each). The sample from archaeology has 15 prepositional connections, most frequent being those with the pronouns *it* (22) and *them* (15), further follow *him* (5), *her* (1) and *us* (1). The sample from zoology contains only 9 prepositional connections, 8 with the pronoun *them* and 1 with the pronoun *it*. The sample from physics has 30 prepositional connections, most frequent being those with the pronoun *them* (17), further follow the pronouns *it* (8), *us* (3) and *him* (2). The smallest number of prepositional connections, 6, occurs in the sample from chemistry; it has 3 prepositional connections, *him* 2, and *them* 1.

Examining the proportion between subjective and objective (simple and prepositional) case in particular samples we find in the sample from sociology 208 occurrences of the subjective case, i.e. 75.00% against 63 (i.e. 23.25%) occurrences of the objective case. The sample from archaeology has 210 occurrences of the subjective case, i.e. 74.20% against 73 (25.80%) occurrences of the objective case. The sample from zoology contains 127 occurrences (i.e. 82.47%) of the subjective case against 27 (17.53%) occurrences of the objective case. The sample from physics has 221 occurrences (77.54%) of the subjective case against 64 (22.46%) occurrences of the objective case. In the sample

from chemistry we find 76 (83.52%) occurrences of the subjective case against 15 (16.48%) occurrences of the objective case. The differences between particular samples do not exceed 9.32%.

4. Comparison of styles examined

The differences between particular styles which were subjected to statistical examination are shown in table 17. The comparison is possible as the corpus of each style contains an equal number of words: 50,000. Thus we can compare the absolute and relative numbers of occurrences of particular personal pronouns.

As far as the total number of all personal pronouns is concerned, the greatest frequency of occurrence is found in colloquial style, amounting to 6,470 (12.94%) of all words examined. The second place is occupied by the style of fiction with 4,612 (9.23%) occurrences of all words of the corpus. The third place is taken by the specialized and scientific style with 1084 personal pronouns, i.e. 2.17% of all words examined. The striking lack of personal pronouns clearly separates the specialized style from the style of fiction and from the colloquial style.

We will now compare the frequency of occurrence of particular personal pronouns in the styles examined. Thus the pronoun *I* is most frequent in the colloquial style (32.46% of all personal pronouns) as well as in the style of fiction (21.63% of all personal pronouns). The most frequent personal pronoun in specialized style is *it* (39.02% of all personal pronouns). In the style of fiction and in colloquial style this pronoun takes the third place with the frequency of 13.00% in the style of fiction and 14.71% in colloquial style. In specialized style the third place is taken by the pronoun *we* (14.58%). On the fourth place we find in the style of fiction the pronoun *you* (11.72%), in colloquial style the pronoun *he* (6.88%), in specialized style the pronoun *them* (10.05%). The fifth place is occupied in the style of fiction by the pronoun *him* (5.96%), in colloquial style by *me* (5.84%), and in specialized style by *he* (9.32%). Further places are taken by pronouns with a smaller frequency than 5.84%. The order is as follows: 6. *she — she — us*, 7. *they — we — you, him*, 8. *me — they — you, him*, 9. *we — him — I*, 10. *them — her — me*, 11. *her — us — her*, 12. *us — them — 0*.

Table 17 also reveals that there are few personal pronouns that have approximately the same frequency of occurrence in two or three styles examined. They are: *me, her, it, us* in the style of fiction and in colloquial style; in specialized style the frequencies of occurrence mostly differ in comparison with the other two styles.

Comparison of all three styles shows, above all, a considerable diversity of specialized style from the other two styles examined. On the other hand

Table 17

Personal pronouns	style					
	fiction		colloq.		specialized	
	abs.	%	abs.	%	abs.	%
I	998	21.63	2100	32.46	17	1.57
me	249	5.40	378	5.84	1	0.09
you	541	11.72	1651	25.52	20	1.85
he	895	19.39	445	6.88	101	9.32
him	275	5.96	140	2.16	20	1.85
she	261	5.66	206	3.18		
her	121	2.62	93	1.44	1	0.09
it	600	13.00	952	14.71	423	39.02
we	200	4.33	170	2.63	158	14.58
us	64	1.39	85	1.31	23	2.12
they	253	5.48	166	2.57	211	19.46
them	158	3.42	84	1.30	109	10.05
Total	4615	100.00	6470	100.00	1084	100.00

comparison of the style of fiction with colloquial style shows partly coincidences, partly differences. Style of fiction and colloquial style sometimes overlap. There are belletristic works in which the authors sometimes use a direct talk — this can explain some quantitative agreements between both styles.

On the whole, our investigation has shown that the frequency of occurrence of personal pronouns can be valued as a significant and indisputable stylistic characteristic. In addition to differences between particular styles we find, however, differences even within the particular styles, differences which are conditioned by the factor of contents of particular works of one and the same style.

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