Survivors and losers: Why are some surnames more frequent than others?

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Abstract: Not only sociocultural, but also biological reasons account for the popularity of certain surnames. Focusing on the former, onomasticians might be underestimating the latter. This paper purports to confront with selected contemporary Polish data the hypothesis of geneticist Bryan Sykes, who in 2003 suggested that the survival of monogenetic surnames might be linked to consistent prevalence of male over female offspring in successive generations. This added an extra dimension to the hitherto known genetic drift, a process that affects patrilineally-transmitted surnames, leading to the evolutionary success of the lucky few and to the gradual extinction of many others.
Keywords: surnames, surname frequency, male ratio, genetic drift, Y chromosome.

Introduction: sociocultural versus biological reasons for surname frequencies

There is no doubt that in the history of surnames, "some have clearly [fared] better than others" (Redmonds, King and Hey 2011: 62). Consequently, it is probably part of the job description of an onomastician interested in surnames to wonder why some of them are immensely frequent, while others are rare or become extinct.

It goes without saying that surnames (as well as other proper names) are sociolinguistic phenomena embedded in a culture. This idea permeates at least some of the onomastic research. As Atawneh 2005 puts it, "family names reflect the style of life in the past in terms of agriculture, professions, industry, human characteristics and place of living". A similar stance has been taken by Abramowicz when she wrote that "[e]verybody's personal name is intrinsically linked with the environment from which it emerges. It always appears in living language and is a reflection of the life of all the nation, its history, customs, certain tendencies and ordinary everyday life" (2002: 25).

Therefore, it is only natural that the answers to the questions about surname frequency are sought within the sphere of sociolinguistics. For instance, the name *Smith* ranks high on surname frequency lists in England and Scotland. The same is true of its semantic equivalents in various European countries. There is *Schmid* or *Schmidt* in Austria, *Kovačević* and *Kovačić* in Croatia, *Schmidt* in Germany, *Sepp* in Estonia, *Кузнецов* in (the European part of) Russia, *Lefebvre* and *Lefèvre* in France, *Kovács* in Hungary, *Mac Gabhann* in Ireland, *Ferrari* in Italy, *Kowalski* in Poland, *Smit* and *Smits*

in the Netherlands. It is usually said by way of explanation that the eponymous occupation was quite popular and important to the community at the time when surnames emerged. In every village, there may have been a blacksmith and nicknaming him by his profession was a natural thing to do; at some later point in history, the nickname became fixed as a hereditary family name.

Other cultural and sociolinguistic factors also contributed to the increased frequency of certain surnames. For instance, the surnames that implied the noble status of their bearers were in high demand and were claimed by unrelated usurpers (in fact, in some countries the law even expressly forbade such practices), which may have led to the enlargement of their stock. Name-changing immigrants wishing to merge into the host society are also responsible for the spread of certain surnames or surname types. Conversely, ridiculous or otherwise demeaning names tended to be changed if this was legally possible, thus leading to the depletion of the surname stock. The same held true for unwieldy immigrant names, replaced with native-sounding ones.

Nevertheless, sociocultural factors provide only a partial explanation for the present distribution of surnames. In many countries surnames stabilised relatively long ago, so surname frequencies must have undergone considerable changes since then. Consequently, not only sociocultural but also biological causes must be considered in analysing what brought about the present surname frequencies. The immediate reasons for the *extinction* of a surname seem rather trivial and in fact well-known from the history of royal dynasties: the lack of male progeny. The exact mechanism by which this extinction occurs is somewhat more intricate:

> Probability theory has tackled one aspect – the chance that a name with just one holder will become extinct. The probability of extinction turns out to be an astonishing 89%, although the exact figure depends on the assumptions made […] The theoretical result has been roughly confirmed by Christopher Sturges and Brian Haggett, who did a computer simulation to calculate the number of descendants from each member of an original population. They found that after 23 generations, about 76% of the original population had no male descendants, so if a name had just one holder in the original population, there was a 76% probability that it would become extinct – the difference from 89% is probably mainly because they made different assumptions about the chances of having particular numbers of sons in each family (Ogden 2000).

At the same time, patrilineally transmitted surnames are also subject to genetic drift, which leads randomly to the strengthening of some "lucky" surnames and to the depletion of the stock of a plethora of "unlucky" ones. Although the effects of the drift are especially quickly visible in small populations, it makes its presence on a larger scale as well, provided that a sufficient number of generations passes. In consequence, the more time has elapsed since the fixation of hereditary surnames, the more visible its effects. "After enough time every citizen of the country will have a single surname, and all the other ones will be extinct" (Shnerb et al. 2013). This is basically why there are so many different surnames in Japan (where obligatory surnames for all of the population

were introduced only in the 19th century), as opposed to very few in China, where surnames have a history of as many as several thousand years (cf. King and Jobling 2009, Sykes 2004: 238–240). However, apart from the phenomenon of genetic drift, are there any other biological reasons for some surnames being *more successful* than their rivals?

The findings of Bryan Sykes

Until recently, such questions seemed to belong to the sphere of human genetics and not onomastics, though there had existed studies since the 19th century that combined both fields (for an overview see Jobling 2001). However, at the turn of this century there came a change in thinking about what these two disciplines may have in common:

> Until 1999 I would have hesitated to write anything more about [surnames], for I have spent a lifetime working on it and felt that, with the publication of *Surnames and Genealogy: A New Approach* (1997), I had exhausted what I could usefully say. It was then that biologist Bryan Sykes published his findings on the Sykes Y chromosome and opened up exciting new avenues of research: suddenly surnames were in the news, and experiments along similar lines, both in this country and abroad, assumed renewed significance (Redmonds 2004: xii).

In the above, Redmonds referred to Sykes and Irven 2000. The basic tenet of their pioneering – but also controversial – study concerned the surname *Sykes*. This surname comes from the Old English *sic* or Old Norse *sik*, meaning 'a small stream or gully' – a suitable name for someone living by a gully. There are almost 10 thousand registered UK voters with that surname, and it stands to reason that such a nickname and then a surname should be re-invented multiple times, in other words it should be polygenetic. In such a case, their present bearers would not all be related by blood in a demonstrable way. To test that hypothesis, requests for a cheek-cell sample were sent to 269 male Sykes chosen at random from the three counties with the highest concentration of the surname (West Yorkshire, Lancashire, and Cheshire) and 61 of the addressees sent back their sample. As the subsequent DNA tests showed,

> almost half the sample shared the same Y-chromosome haplotype, which has not been observed in control samples either from the same geographic region or from the United Kingdom as a whole. This points to a single surname founder for extant Sykes males, even though written sources had predicted multiple origins. The distribution of other Sykes Y-chromosome haplotypes were not significantly different from those in controls and may be accounted for by the historical accumulation of nonpaternity [i. e. cases of adoption and of marital unfaithfulness] during the past 700 years (Sykes & Irven 2000: 1417).

These findings contradicted the hitherto uncontested intuitive notions about which types of surnames could, on the grounds of semantics, reasonably be expected to

be monogenetic (for instance those derived from the name of a little village, assuming there existed only one village by that name at the time when the eponymous surname originated), and which probably had multiple origins (for example those derived from nicknames or from appellatives denoting common professions). While Hey (2000: 157) freely admitted that "some [...] nicknames are surprisingly local or regional in their distribution", other researchers were not fully convinced by Sykes's findings:

> If there is a disappointment, it is that genealogists still have to be convinced that one family alone is responsible for all those who now bear the name. Had the sample been larger, and deliberately targeted to take account of Sykes families away from the 'heartland', the conclusions would be on a firmer footing. One reason why family historians are reluctant to embrace Sykes's conclusions wholeheartedly is that research has shown how some families expand prolifically in the course of their history, whereas others scarcely ramify at all but survive perilously from one generation to another. It is difficult therefore to suppress the suspicion that one or two such survivors might be amongst the over 40 per cent who did not share the 15–23–11–14 haplotype [i.e. the genetic characteristics typical of most Sykes samples] (Redmonds 2004: 31).

However, another observation made by Sykes, closely connected with the previously mentioned one, passed largely unnoticed to onomasticians. In fact, Sykes himself was obviously so doubtful of it (especially that his observation concerned one surname only – his own), that he did not publish it in a scholarly journal, but in a book for general readers:

> I remember when I did the post round during the Christmas holidays near my parents' home on the borders of Suffolk how two surnames, Ablitt and Mathews, must have made up a good third of the deliveries. I had occasionally wondered about that during my years of teaching genetics and, rather lazily, put it down to the random chance of having a son or a daughter. That process, called genetic drift, is a powerful one in small communities and very soon eliminates most of the surnames without recourse to any other more exotic mechanism [...] But *suppose a surname did have a tendency to produce more sons than daughters*; that would certainly help a lot. But does it happen? Does it explain why some surnames are very common in a locality? No-one seems to know. This existence of a powerful random mechanism to explain the evidence for abundant surname survival, and extinction, may have meant that those people who think about such things had paid little attention to the possibility. However, since hardly anybody had ever thought that so many names had single genetic founders, the extraordinary success of some names was not properly appreciated (Sykes 2004: 238, 240, emphasis added).

The suspicion that there was a stable tendency in some families to have more sons than daughters ran so much against the usual assumptions of human genetics, that Sykes evidently hesitated. Yet his analysis of registers from a school in Slaithwaite – a village in the Colne Valley, West Yorkshire, where a high concentration of Sykeses has been observed – yielded unexpectedly consistent results. The school records spanned over a period of time from 1893 to the present; of the total of 393 schoolchildren by the

name of *Sykes*, as many as 212 were boys and there were only 181 girls. Sykes ruled out the possibility of parents refraining to send a daughter (but not a son) to school – in the analysed period all children had to attend primary school by law. Moreover, if parents decided on expensive private education instead of a local school (thus tipping the sex ratio in the above-mentioned registers), they would be far more likely to invest in such a way in the future of their sons than of their daughters.

The hypothesis has not been convincingly confirmed. For instance, Rodgers and Doughty (2001) arrived at the conclusion that any observed bias in the number of offspring towards one sex can be explained away by chance and by a facultative response to "as yet unspecified" environmental mechanisms.

Sykes's bias-towards-boys hypothesis checked against Polish data

In the case of the surname *Sykes*, the percentage of boys in school registers amounted to 53.94%, whereas it is usually assumed that boys constitute on average about 51.4% of newborns[1]. A question arises if this bias towards boys would be the same for other surnames. It is not easy to find sufficient large-scale school register data to answer this question. However, if more boys than girls were indeed born to families bearing certain surnames, this bias should also show later in the lives of these families. There is, after all, no reason to think that this surplus of newborn males in some families (if there is such a surplus, of course) would disappear later in life at a rate different from the analogous rate in other families. Therefore, in the overall number of people bearing a particularly "successful" surname (in the sense of a higher percentage of boys born in the families bearing that surname), the proportion of males to females should also be somewhat higher than the average for the population. Note that for this mechanism to work and for this hypothesis to be testable, the hidden assumption must be that the surname be monogenetic, which means that it has basically developed only once in history and that, except for non-paternity events, its male bearers are all related.

About a hundred[2] most frequent Polish surnames have been analysed to reveal the proportion of males among their bearers. The hypothesis was that among the bearers of the most popular surnames there should be a higher percentage of men than the ratio for all the population of Poland, which was at the time 48.39%. The results are presented in the table below. The surnames are listed according to their position in frequency ranking.

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[1] In 2013 the ratio of male live births for England and Wales was 51.31% and in the years 1938–2013 it reached values between 51.15% and 51.57% (source: own calculations on the basis of governmental statistics, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77–317529).

[2] The analysis was based on government data pertaining to 100 most frequent surnames. However, the data were in the form of two separate lists: one for men and one for women. In the case of two surnames (*Górecki* and *Konieczny*), the lists included the numerical data for one sex only, the surname of the other sex being outside the top hundred. Consequently, these surnames have been excluded from the present analysis.

Surname	Number of bearers (as of January 2015)		Male ratio
	Males	Females	
1. Nowak	138,119	139,072	49.83%
2. Kowalski	88,674	89,429	49.79%
3. Wiśniewski	69,558	70,244	49.75%
4. Wójcik	62,987	63,538	49.78%
5. Kowalczyk	61,880	61,958	49.97%
6. Kamiński	59,863	60,846	49.59%
7. Lewandowski	58,618	59,773	49.51%
8. Dąbrowski	57,877	59,529	49.30%
9. Zieliński	57,605	58,771	49.50%
10. Szymański	56,456	57,619	49.49%
11. Woźniak	56,365	56,440	49.97%
12. Kozłowski	48,163	48,911	49.61%
13. Jankowski	43,466	44,103	49.64%
14. Mazur	42,530	42,623	49.95%
15. Wojciechowski	41,864	42,828	49.43%
16. Kwiatkowski	41,797	42,798	49.41%
17. Krawczyk	40,572	40,878	49.81%
18. Kaczmarek	39,505	39,641	49.91%
19. Piotrowski	38,770	39,857	49.31%
20. Grabowski	36,847	37,693	49.43%
21. Pawłowski	35,143	35,781	49.55%
22. Michalski	34,592	35,587	49.29%
23. Zając	35,362	34,628	50.52%
24. Król	34,330	34,496	49.88%
25. Nowakowski	33,323	34,076	49.44%
26. Wieczorek	32,278	32,857	49.56%
27. Jabłoński	31,687	32,502	49.37%
28. Wróbel	32,166	31,692	50.37%
29. Adamczyk	31,511	31,890	49.70%
30. Majewski	31,012	31,912	49.28%
31. Dudek	31,542	31,120	50.34%
32. Nowicki	30,455	31,480	49.17%
33. Olszewski	30,257	30,794	49.56%
34. Jaworski	29,823	30,619	49.34%
35. Stępień	30,073	29,827	50.21%
36. Malinowski	29,743	30,100	49.70%
37. Pawlak	29,063	28,957	50.09%
38. Górski	28,379	29,337	49.17%
39. Witkowski	28,124	28,915	49.31%
40. Walczak	28,064	28,253	49.83%
41. Sikora	27,996	27,970	50.02%
42. Rutkowski	27,588	28,158	49.49%
43. Michalak	27,078	27,351	49.75%
44. Baran	27,397	26,694	50.65%
45. Szewczyk	26,858	27,156	49.72%

Surname	Number of bearers (as of January 2015)		Male ratio
	Males	Females	
46. Ostrowski	26,298	27,159	49.19%
47. Tomaszewski	25,279	26,033	49.27%
48. Pietrzak	24,856	25,369	49.49%
49. Zalewski	24,691	24,859	49.83%
50. Wróblewski	24,409	24,902	49.50%
51. Jasiński	24,202	24,933	49.26%
52. Duda	24,806	24,279	50.54%
53. Marciniak	24,146	24,688	49.45%
54. Zawadzki	23,779	24,458	49.30%
55. Jakubowski	23,686	24,419	49.24%
56. Sadowski	23,774	24,105	49.65%
57. Bąk	23,885	23,109	50.83%
58. Wilk	22,618	22,351	50.30%
59. Włodarczyk	22,513	23,026	49.44%
60. Chmielewski	22,503	22,847	49.62%
61. Borkowski	22,045	22,843	49.11%
62. Sokołowski	21,528	22,459	48.94%
63. Szczepański	21,447	21,883	49.50%
64. Sawicki	21,373	21,915	49.37%
65. Kucharski	20,972	21,318	49.59%
66. Lis	21,204	21,074	50.15%
67. Maciejewski	20,195	20,887	49.16%
68. Kubiak	20,354	20,722	49.55%
69. Czarnecki	20,181	20,832	49.21%
70. Kalinowski	20,250	20,726	49.42%
71. Mazurek	20,416	20,539	49.85%
72. Wysocki	20,230	20,680	49.45%
73. Kołodziej	19,439	19,690	49.68%
74. Urbański	19,302	19,769	49.40%
75. Kaźmierczak	19,206	19,229	49.97%
76. Sobczak	18,379	18,295	50.11%
77. Głowacki	17,850	18,223	49.48%
78. Zakrzewski	17,666	18,091	49.41%
79. Krajewski	17,525	18,125	49.16%
80. Sikorski	17,339	18,253	48.72%
81. Wasilewski	17,606	17,821	49.70%
82. Adamski	17,440	17,982	49.23%
83. Krupa	17,652	17,569	50.12%
84. Gajewski	17,193	17,619	49.39%
85. Laskowski	17,201	17,611	49.41%
86. Ziółkowski	17,167	17,522	49.49%
87. Szulc	17,137	17,344	49.70%
88. Makowski	17,024	17,271	49.64%
89. Mróz	17,214	16,998	50.32%
90. Czerwiński	16,841	17,321	49.30%

Surname	Number of bearers (as of January 2015)		Male ratio
	Males	Females	
91. Baranowski	16,834	17,046	49.69%
92. Brzeziński	16,730	17,129	49.41%
93. Szymczak	16,768	17,058	49.57%
94. Przybylski	16,696	17,109	49.39%
95. Błaszczyk	16,524	16,918	49.41%
96. Borowski	16,528	16,883	49.47%
97. Andrzejewski	16,509	16,811	49.55%
98. Kaczmarczyk	16,696	16,599	50.15%
99. Cieślak	16,540	16,627	49.87%
Total for Poland (as of Dec. 2014)	18,619,809	19,858,793	48.39%

As can be seen in the above table, the male ratio exceeds the national average – 48.39% – and it is so in the case of *all* the 99 surnames. Moreover, with the exception of two surnames (*Sikorski*, *Sokołowski*), the ratio for all the 97 other surnames is above 49%.

It is interesting to see if the surnames with the highest male ratio share some common characteristics. The following table presents only those surnames in which the above-mentioned male ratio is higher than 50 per cent. There are 15 such surnames. Interestingly (and rather unexpectedly), none of them end with the *-ski* suffix (traditionally, though not quite accurately, linked with noble origin), even though this surname type prevails among the surnames in the table (60%). Most of the 15 surnames in the table are identical to corresponding appellatives, over half of which are names of animals.

Surname	Appellative meaning, or (after "<") the most likely etymology	Male ratio
Zając	'hare'	50.52%
Wróbel	'sparrow'	50.37%
Dudek	'hoopoe' (a bird)	50.34%
Stępień	< *stępa* 'mortar for crushing grain', or *stąpać* 'to tread, to go'	50.21%
Pawlak	< *Paweł* 'Paul'	50.09%
Sikora	'tit' (a bird of the *Paridae* family)	50.02%
Baran	'ram'	50.65%
Duda	< *dudy* 'a folk musical instrument'	50.54%
Bąk	'botaurus; great bittern' (a wading bird); 'horse-fly'	50.83%
Wilk	'wolf'	50.30%
Lis	'fox'	50.15%
Sobczak	< given names such as *Sobiesław*, *Sebastian*	50.11%
Krupa	'groats, porridge'	50.12%
Mróz	'frost'	50.32%
Kaczmarczyk	'son of an innkeeper'	50.15%

Discussion

A hundred surnames seem rather many and one feels tempted to ask how it is possible to achieve the average if 100 most frequent surnames are all well above it. In fact, the top 100 surnames constitute but a tiny fraction of the overall number of surnames in use in contemporary Poland (which is over four hundred thousand) and are borne by merely 12% of the population (Skowronek 2001: 81). Incidentally, a similar distribution has been observed among the surnames in Great Britain (cf. Ogden 2000).

It is really difficult, however, to account for the findings presented in the second table. One would have thought that if any pattern were to be detected, the chance for monogenesis (and thus, for the genetically-conditioned bias towards more male offspring that would show in the statistics) would be higher in the case of a *-ski* surname. The reason why this surname type has been traditionally associated with the nobility is that many such names were historically derived from particular place names to mark land ownership. However, to equate a *-ski* surname with noble status is an oversimplification. First, many old Polish noble families, especially before the 14th century, had surnames without that suffix. Second, the increased popularity and desirability of the *-ski* surname type, coupled with the lack of effective legal ways of surname protection, led in subsequent centuries to the situation when the same *-ski*-ending surname could be used both by a nobleman and by a peasant. Finally, *-ski*-ending surnames with time came to be derived not only from place names but also from appellative-type surnames, which in this way assumed a cachet of nobility in the eyes of their lower-class upwardly-mobile bearers. As Kaleta emphasised:

> In the 17th century one witnesses in documents throughout Poland a tendency for burghers and peasants to escape from appellative surnames by adding to them the *-ski* suffix, but also other suffixes: *-owic(z)*, *-ewic(z)*, *-ik*, *-ek*, *-ka* etc. The old and the new surnames appeared in documents side by side to identify the same person, e.g. *Jeż* > *Jeżewski*, *Jeżewicz*, *Suwała* > *Suwałowski*, *Suwaliński*, *Suwalski*, *Suwacz*, […] *Domagała* > *Domagalski*, *Domagalczyk*, *Mokry* > *Mokrski*, *Morawiec* > *Morawski* […] In the 17th century the last noble families bearing surnames other than ending with *-ski* adapted to the main type […] Since the 17th century *-ski* surnames have been treated abroad as typical of landed gentry, and in later centuries – as typically Polish (1998: 97–98).

Today *-ski* surnames constitute about one-third of the top thousand most frequent surnames in Poland (Zawadzki 2002: 18).

The importance of surname frequency data for onomastics

One might wonder why the above observations, even if of relevance to genetics, should at all be of any interest to the onomastician.

In onomastics, perhaps similarly to history and some other disciplines routinely classified as the humanities, there is a certain proneness to offer causal explanations in retrospect. To put it differently, once we know what happened, we feel like it was

inevitable and we could see it coming. Coupled with the synchronic contemporary picture of the anthroponomasticon – that is, the (chance) surname survivors – this means that it is tempting to write sense into the structure of whatever has survived, whereas this survival might have been purely accidental.

As a case in point, one could consider the puzzle of the Polish surname *Lewandowski*. It is a very frequent surname in contemporary Poland: at the beginning of 2015 it ranked 7th among the surnames with the highest number of bearers. There are hardly any counties in Poland where it has not made its presence. However, given the surname's history and etymology, its popularity is rather difficult to explain. It first appears in written sources as late as the 17th century, and the records of the 17th and 18th centuries mention few people by that name (Skowronek 2000: 30–31). It is usually assumed that the surname is derived (directly or via an onym) from the appellative *lawenda* 'lavender'. But it would be quite misleading to conclude that lavender must once have been extremely important for Poles. In fact, the plant came to Europe from Persia or the Canary Islands. Moreover, it is – and has been – much more typical of the Mediterranean than of Central Europe: even though it was already popular in Ancient Rome, in Poland it was still a novelty as late as 1558 (ibid: 33–34). To sum up, the surname's present popularity seems unusual and it would be far-fetched to attribute its frequency merely to the importance of lavender in Poland. If one were to paint a linguistic picture of the world on the basis of the ubiquity of the surname *Lewandowski*, this picture would probably be disturbingly distorted (on the topic of surname frequencies in relation to the linguistic image of the world, see also Skowronek 2001: 13).

A similar controversy surrounds the surname *Kazlauskas*, which has been Lithuania's most frequent surname for some time now. It is of Polish origin (*Kozłowski* in Polish), derived from the appellative *kozioł* 'he-goat'. The staple explanation for its popularity usually given by Lithuanian scholars is that it was originally a Lithuanian surname, derived from the Lithuanian appellative *ožys*, *oželis* 'he-goat', but it underwent translation into Polish (see e.g. Zinkevičius 2008: 492). Pointing to the fact that the surname *Ožys* is rare in Lithuania only makes this argument circular (it might be said that it is rare today exactly because almost all instances were translated). It is difficult to explain why other genetically Lithuanian surnames have not undergone translation on such a massive scale (assuming that such a surname should be polygenetic), but it is even more puzzling why a he-goat, of all the animals, domestic or otherwise, should figure so heavily in the Lithuanian linguistic image of the world.

As another example, let us consider surnames derived from the appellative *dog*. In 1990 there was only one person in Poland by the surname *Pies* 'dog' and by contrast as many as 19,902 people bearing the surname *Kot* 'cat' (Zawadzki 2002: 11). Granted, there were about two dozen people named Piesek 'little dog', almost three dozen named *Psiarski* 'of a dog' and some derivatives whose link with the appellative was rather doubtful (Rymut 2005: 8557, 9119, Rymut 2001: 235). But these numbers are modest when compared with the number of bearers of 'cat' surnames: *Kociak*, *Kociakowski*, *Kociński*, *Kot*, *Kotania*, *Kotaniec*, *Kotanowicz*, *Kotański*, *Kotecki*, *Koteczek*,

Koteczka, Kotek, Kotkiewicz, Kotko, Kotkowiak, Kotkowicz, Kotkowski jointly account for almost thirty thousand bearers (Rymut 1999: 5120–5483), and the list is not exhaustive yet. As Zawadzki (2002: 11) noted, "this disproportion is astounding, considering that both animals have accompanied man probably to the same extent". On the other hand, as GenWiki data indicate, in Germany in the year 2002 there were 1,146 bearers of the surname *Hund* 'dog' and 1,603 people with the spelling variant *Hundt*. Also in France there are the surnames *Canioni, Cagne, Cagneau, Cagnet, Cagnol, Cagnon, Caignol, Caniard, Canasi, Canetti*, all derived from appellatives with the meaning 'dog' (cf. Paoli et al. 2009: 51–53).

However, the mystery connected with the popularity of such surnames as *Lewandowski* and *Kazlauskas*, or with the difference between Poland and Germany or France regarding surnames derived from the appellative meaning 'dog', does not seem as insoluble if one admits in their historical development an element of biologically-determined randomness as outlined above. Skowronek (2000: 31) admits: "An idea emerges that the contemporary frequency of the anthroponym *Lewandowski* is intrinsically linked to a purely biological factor, such as the number of generations of its bearers and the different number of children (including sons) in successive generations". In other words, biological factors might be at play here and they might obscure the impact of the sociocultural ones. This only goes to show what an interdisciplinary endeavour onomastic research is.

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