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SOME FIRST NAMES IN OLD CHURCH SLAVONIC[*]

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Abstract: The contribution deals with Old Church Slavonic first names of Slavonic origin. They are usually compounds formed by a no longer productive joining of two lexical bases. These names have their own morphological, word-formative, semantic, and etymological peculiarities. Some of them constitute the basis in the formation of toponyms; they are homonyms of the names identical with them. The compound first names are not only interesting from the linguistic perspective, they, in addition, provide valuable historical information that serves as a means for assigning their bearers to a certain social stratum. The bearers of compound first names were high-born people, whereas persons lower in the social hierarchy possessed simple first names, often originating from the shortening of compound first names.

Keywords: onomastics; Slavonic; compounding; etymology

The documents originating in the oldest period of Church Slavonic literature, in the period of the early stages of the translation activities of the Slavonic apostles and their disciples, contain a considerable number of names of different origin. They occurred as far back as the Cyrillo-Methodian period; since then they have mostly survived in younger transcripts. In particular, this concerns the so-called Moravian-Pannonian Legends (the Life of Constantine and the Life of Methodius), the Old Church Slavonic Legend of St Wenceslas, the Life of St Ludmila (both versions), and the Gospels (the Ostromir Gospel, and the Assemani Gospel).

The toponyms, hydronyms and ethnonyms recorded in the Old Church Slavonic documents are largely of non-Slavonic origin, with ambiguous interpretation, and their analysis would go far beyond the limits of this work. For this reason, the present paper deals with the Church Slavonic first names only because it is above all they that contain certain morphological, word-formative, semantic and etymological peculiarities. In the following list the names are arranged in alphabetical order. We provide a brief outline of the information about the name's bearer, about the document where the name occurs, its possible equivalents in modern Slavonic languages as well as some other data related mostly to the word-formation and semantics of the name. The material, including the etymological analyses, is principally *taken from the Etymological Dictionary of the Old Church Slavonic Language (Etymologický slovník jazyka staroslověnského,* ESJS), which is in turn based upon the material of the *Old Church Slavonic Dictionary* (*Slovník jazyka staroslověnského,* SJS). In the case where etymological analyses are questionable or undecided, we provide our insights on the possible origin of the names chosen.

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Boljeslavъ, *-a*, is the name of the Czech prince Boleslav I, who killed his brother Wenceslas (Václav). It is mentioned in the Old Church Slavonic Legend of St Wenceslas. It consists of the adverb *bolje* 'more' and *-slavъ* 'famous'. It is used in modern Slavonic languages (in Czech, Slovak, Bulgarian, Serbian-Croatian, Russian *Boleslav*, and Polish *Bolesław*). It means 'more famous' (ESJS, vol. 2: 73); the name of *Vęšteslavъ*, Václav, has the same meaning (cf. below).

Borivoi, *-ja* was the first Přemyslid. His name occurs in the Life of St Ludmila (an Old East Slavonic text). The name is probably of Proto-Slavonic origin, and it continues to be used in old and modern Czech language (*Bořivoj*), in Slovak (*Borivoj*, probably from Czech), and there is also the Polish older and rarer form *Borzywój* (SK, vol. 1: 331), and in Serbian, Croatian *Borivoj*. The compound consists of the imperative of the verb 'to beat, to fight, to defeat' as its first part, and the noun *vojь* 'formation of soldiers' as the second part, together 'thrash, defeat troops' (ESJS, vol. 2: 73, 74; ESSJa, vol. 2: 204). Thus, *Borivoi* is 'the one who thrashes, defeats troops'.

Čьsta, *-y* is the name of the Czech prince Wenceslas' killer, occurring in the Old Church Slavonic Legend of St Wenceslas also in the form of *Časta*, *Čista*, *Tista*. It is supposed to be an informal version of the original compound that has not survived in the written form, though the existence of which is reflected by a large number of the Old Czech compound first names with the noun **čьstь* 'honour' as the 1st or 2nd part, cf. *Čsti-*, *Cti-*, *Sti-bor*, *-rad*, *-mir*, *-slav*, or Old Czech *Svéčest*, *Necta*. The use of the informal form may in this case express a disparaging attitude to the person who committed a crime (ESJS, vol. 2: 119).

Dragomira, *-y*, a Czech princess, a wife of the prince Bořivoj I. The name is recorded in the Church Slavonic Legend of St Wenceslas. It is a feminine derivative from the masculine name known as far back as the end of the 8th century. The Proto-Slavonic form may be reconstructed in accordance with the contemporary form used in Slavonic languages as **Dorgomir*. The first part of the compound comes from the adjective **dorgъ* 'dear, rare', the second part is usually interpreted from Proto-Slavonic **měrъ* representing a continuation of the Indo-European adjective **mēro-/mēri-* 'great, famous', from which e.g. Old High German *mārī* 'a piece of news' and German *Märchen* 'fairy tale' are derived. The name *Dragomira* would mean 'rare and famous' in this interpretation. Miklosich (1860: 77ff.) suggests a relationship with Indo-European **mēro-*. It is less probable in this case that Proto-Slavonic **měrъ* was borrowed from Germanic languages as Hirt (1898: 4) and Milewski – Schmidt (1957: 291) already pointed out. Differently Svoboda (1964: 81), who is convinced about the original Proto-Slavonic element **mirъ* 'peace, world'. Kopečný (1974: 45), Knappová (1985: 217) and ESJS (vol. 3: 145) are of the same opinion. In this interpretation, *Dragomira* would be 'a woman whose peace is dear to her heart'. The name occurs in Czech and Slovak as *Drahomíra*, in Polish as *Drogomira*, and in Bulgarian and Serbian-Croatian as *Dragomira*.

Gněvisa, *-y*, the unique, probably informally abbreviated first name of one of the killers of the prince Wenceslas. It is recorded in the Legend of St Wenceslas and also in its later editions. The name consists of the noun *gněvъ* 'anger', extended with the expressive suffixes *-isa*, *-ysa* (cf. the variant *Gněvysa*) or *-sa* (recorded only as the possessive adjective *Gněvesei* (*Gněvьsii*) *dvorъ*). The suffixes probably come from Proto-Slavonic **-ьsa*, as stated by Sławski (SK 1975, vol. 2: 32, ESJS, vol. 3: 182). The rare form of *Gněvъka* (once in the Minej Old East Slavonic manuscript of the Legend of St Wenceslas) is considered to be

a scribal clerical error (-*s*- replaced with -*k*-); however, considering the possessive adjective with -*s*-, one may not rule out that it is a diminutive noun with -*ъka* having a depreciatory meaning.

Gorazdъ, -*a* is the name of Methodius' disciple and the designated successor in the office of Moravian archbishop; recorded in the document dating back to the Cyrillo-Methodian period, in the so-called Moravian-Pannonian Legend, in an Old East Slavonic transcript of the original Old Church Slavonic text. Proto-Slavonic *Gorazdъ occurs in the Polish, Slovak and Czech languages as a name; it is in the base of some toponyms, cf. e.g. Czech *Horažďo-vice*, Slovak *Gorazdov* or Polish *Gorazdów*. The name is derived from the Proto-Slavonic appellative *gorazdъ 'eloquent, skilful, agile, etc.', the origin of which is unclear. Miklosich (1867: 90), Jungmann (1835–1839, vol. 1: 727) and Berneker (1908–1914, vol. 1, 329ff.) consider the appellative a loanword from Gothic *ga-razds 'eloquent, competent'. The most serious drawback of this semantically persuasive interpretation is the lack of attestation of the Gothic word. – The interpretation of Iljinskij (1916: 4, 8) and Brückner (1910: 307) is connected with the meaning 'to speak', too; they derive the word from the Proto-Slavonic root *gor- 'to speak'. In this Slavonic interpretation, the suffix -*azdъ* (< -*azditi*) is questionable. – Proto-Slavonic *gorazdъ* is connected with *gromazditi* 'to collect, to accumulate' (from Indo-European *ger-/*gor- 'to collect, to fold') in the third interpretation (Stender-Petersen 1922, vol. 5: 675–677; Kiparsky 1934: 28). However, the compound assumes a quite complex semantic development: 'the one who catches, who collects' → 'expeditious, bright' → 'skilful, capable' (ESJS, vol. 3: 190).

Izbraslavъ, -*a* is a Russian Church Slavonic reproduction of the son of St Wenceslas' name recorded as *Iz´-bręslavъ* (the Second Legend of St Wenceslas). Its equivalents can be found in West Slavonic languages, cf. Old Czech *Zbraslav*, *Braslav*, Old Polish *Zbrosław*, *Zbrasław*, *Brosław* (here it is derived from Proto-Slavonic *Sъborslavъ). There is also the rare Old Czech toponym *Izbraslav,* where the initial *Iz*- would correspond, in the same way as the Old East Slavonic *iz*-, to the original Proto-Slavonic form *jъz. – The second part of the name is connected with *slava* 'fame'. The first part of the word is usually connected with the root *bor- coming from Proto-Slavonic *borti 'to fight'. In accordance with this interpretation, *Izbraslavъ* was 'the one fighting for fame'. – The connection of the first part with *bъra- in Proto-Slavonic *bъrati 'to take, to collect' (< Indo-European *bher- 'to take, to carry') is less persuasive (Miklosich 1860: 34). Apart from the fact that we would have to understand the Old Polish name as secondarily formed in accordance with the names with -*ro*-, the semantic interpretation of the word is poorer as well: one mostly fights for fame, while *Izbraslavъ* would mean 'the one collecting fame' (ESJS, vol. 5: 258).

Izęslavъ, -*a* is a Church Slavonic hypercorrect form of the Kievan prince's name *Izjaslav* (1024–1078) coming from the Old East Slavonic text of the Ostromir Gospels written in Novgorod in 1056–1057. This compound contains as the second part the stem -*slavъ* from *slava, slaviti.* The first part of the word consists of the prefix *iz*- and the root present in Old Church Slavonic *jęti 'to take'. Svoboda (1964: 58, 80) assumes that the stem -*slavъ* had only a formal function when this and similar names were formed (ESJS, vol. 5: 259).

Jaroslavъ, -*a* is mentioned in the Novgorod Ostromir Gospels as the name of the Kievan prince Jaroslav I the Wise. It is a compound from *jaro*-, which comes from the adjective *jarъ* 'impetuous, strong', and of -*slavъ* coming from *slava, slaviti.* Therefore, *Jaroslavъ* would be 'noted for his strength'. Etymologists agree with this interpretation. *Jar*- meaning 'strong'

is also a part of another compound name present chiefly in Serbian and Croatian. Rječnik (vol. 4: 472) records *Jaroslav*, *Jeroslav* and also *Jarovít*, the bearer of which was the Slav "god", named also **Svętovitъ* (Polish *Jarowit – Świętowit*), living in a shrine on the territory of the Polabians. The first part of the name *Święto-* comes from Proto-Slavonic **svętъ* 'strong' (ESJS, vol. 5: 270). In modern Slavonic languages, the name occurs in Ukrainian and Russian (*Jaroslávʹ*), Czech and Slovak (*Jaroslav*); in South Slavonic languages we can see also Bulgarian *Jaroslav*.

Ljudъmila, *-y*, the name of the wife of the Czech prince Bořivoj and St Wenceslas' grandmother; she was killed around 920, and has been venerated a saint to the present day. The name is found in the Nikol'skij's variant of the Legend of St Wenceslas and in the Old East Slavonic text of the Life of St Ludmila. It spread together with the legend about her from Czech Old Church Slavonic *Ljudъmila* to the other Slavonic languages, cf. e.g. Slovak *L'udmila*, Old Polish *Ludźmiła*, Ukrainian *Ljudmýla*, Russian *Ljudmíla*, with many variants and neologisms. In this compound of **l'udь* 'people' and the adjective **milъ* 'dear beloved?' meaning 'dear to the people', the *i*-stem in the first part is a sign of antiquity (Milewski 1969: 201, ESJS, vol. 7: 433).

Mьstina, *-y* is the name of a killed member of St Wenceslas' retinue mentioned in the legends about Wenceslas. The name may have been created either with the suffix *-ina* from the noun *mьstь* 'revenge, punishment' or as an expressive derivative of the compound names of the types of *Mstibor*, *Mstihněv*, *Mstislav,* etc. (for example ESSJa, vol. 21: 169, ESJS, vol. 4: 519). – Less convincing is the assumption that *Mьsti-* in *Mьstina* reflects a zero-grade of the Indo-European root **med-* 'to measure, to conclude' (Pokorny 1949–1969, vol. 1: 705).

Ostromirъ, *-a* is the name of the Novgorod governor for whom the Ostromir Gospels were written. It is a rare name, in the other Slavonic languages recorded only as a derivative in toponyms (e.g. Czech *Ostroměř*). It is a compound from **ostrъ* 'impetuous, sharp, rough' and **mirъ* from **-měrъ* (< Indo-European **mēro-/mēri-* 'great, famous'), with the hitherto assumed meaning ***'famous for his impetuousness, roughness, sharpness'. However, the adjective **ostrъ* may also be understood as 'resolute, firm' (ESJS, vol. 10: 600).

Rastislavъ, *-a*, in Russian Church Slavonic also *Rostislavъ*, is the name of the Great Moravian prince who invited Cyril and Methodius from the Byzantine Empire to Moravia. The name is recorded in the Moravian-Pannonian legends, in the ceremonial address in honour of Cyril and Methodius as well as the Croatian-Glagolitic officium of Sts Cyril and Methodius in accordance with the Roman rite from the Ljubljana breviary. The form *Rasticь* is once recorded in the Middle-Bulgarian treatise of the monk Chrabr dealing with the Slavonic script. The name is commonly used in modern Slavonic languages (Macedonian *Rastislav*, *Rostislav*, Croatian *Ràstislav*, Slovak *Rastislav*, Czech *Rostislav*, Polish *Rościsław*, Ukrainian *Rostysláv*, Russian *Rostisláv*). Sorbian uses only the short form *Rost* m. The feminine variant is found as a maiden name in Serbian, Croatian, Slovak, Czech, and Polish. – The name *Rastislavъ* is a compound consisting of the imperative of the verb *rasti* 'to grow' and *-slavъ* with the meaning 'let the fame grow, increase the fame'. The semantic motivation of the name is similar as e.g. in *Boljeslavъ*. – The form *Rasticь* is probably a hypocoristic form from *Rastislavъ* with the diminutive suffix *-icь*. Only little probable is Leeming's (1998: 16–20) assumption concerning the origin of the name from Iranian languages (cf. Ossetian *rast-* 'right, fair, etc.'), originally as the short form *Rasticь*. The compound *Rastislavъ* is then said

to originate only later, its first part being reinterpreted as a reflex of Proto Slavonic *orst- 'to grow' (ESJS, vol. 13: 752).

Retъko, *-a* (or *Retъkъ* (?), the nominative was not recorded) is the name of the scribe of the Codex Suprasliensis, recorded once in the codex. The Old-Croatian form *Retk* and Old-Polish form *Rethko*, *Rethco*, *Retk* probably come from Church Slavonic. Nimčuk (1995: 1, 43–44) mentions the Old Ukrainian hydronym *Retovъ* and the Ukrainian hydronyms *Retyk*, *Ret'*. The equivalents of the personal name *Retъko* are not used in modern Slavonic languages. Old Church Slavonic *Retъko*, *Retъkъ* was probably formed by shortening of the compound *Retislavъ*, *Retimirъ*, the first part of which relates to the Old Church Slavonic noun *retь* 'eagerness, rivalry, quarrel' (Georgiev 1983: 212–213; Račeva 2003: 165–166, ESJS, vol. 13: 762). – Less probable is Zaimov and Kapaldo's (1982–1983: 5) interpretation of the name *Retъko* as a diminutive from *Rato* (< *ratь* 'war, fight', *ratiti sę* 'to struggle, to fight'); the latter is attested e.g. in the Old Russian name *Ratiborъ* or in the Czech toponym *Ratiboř*. The interpretation may be taken into consideration only if we assume that the same change took place in this word as e.g. in *trava > trěva*.

Spytigněvъ, *-a*, a Czech prince, St. Wenceslas' uncle. The name is recorded in Nikol'ský's text of St Wenceslas and the so-called prologue legend about him; nowadays it is rare and hardly ever used in the Czech language; it also existed in Old Polish (*Spycigniew*), where it was borrowed from Czech. The most frequent interpretations consider this compound to be formed from the adverb *spyti* 'groundlessly, needlessly', and the noun *gněvъ* 'anger'. Thus, *Spytigněvъ* would be 'the one being groundlessly angry'. Miklosich (1860: 101) refuses this semantic interpretation. However, his suggested forms *spyti* 'citus; rapid' or 'pulcher; beautiful' do not correspond to the real meaning of the adverb *spyti*. – The name may be interpreted in another way. Its first part is probably an imperative from *(s)pytati* 'to examine, to inquire' (< *pytati*). The word-formation type "verb + substantive" was particularly productive in the old compound names; the verb has usually the form of the old imperative ending with *-i* in all thematic verbs. The name *Spytigněvъ* would mean 'examine, consider anger'. This interpretation is also supported by the explanation of the alternative form *Spytavъgněvъ*, where the first part of the word *spytavъ* corresponds to the past participle active form of the same verb *spytati* meaning 'the one who examined, weighed anger', a prudent person who was not angry without any reason (Valčáková 2006: 464–466; ESJS, vol. 14: 866, 867).

Stanъ, *-a* is recorded twice in the Cyrillic addition to the Glagolic text of the Assemani Gospel dated to the 10th–11th century. Most probably it is a name of the scribe. It can be found in Bulgarian, Serbian, Macedonian, and Old Polish as *Stan*, as well as *Stano* in Serbian, Croatian, Macedonian, and Old Polish; it is an informal form of the name *Stanislav* found in the other Slavonic languages. Most often the name is connected with the first part of the old Slavonic compound *Stanislavъ* consisting of an imperative of the verb *stati* and the nominal adjective *-slavъ*, meaning 'become famous' (Nikonov 1988: 122; Stankovska 1992: 260; Knappová 2006: 257, ESJS, vol. 16: 874, 875).

Svętoplъkъ, *-a* is recorded in the abbreviated form *Stoplъkъ* in the ceremonial address in honour of Sts Cyril and Methodius, in the Moravian-Pannonian legends and in first Old Church Slavonic Legend of St Wenceslas. It is a compound of the Proto-Slavonic adjective *svętъ* 'strong' (from there 'strong in the good', 'holy') and the noun *pъlkъ* 'crowd, for-

mation, troops'. The name with the meaning of 'strong in regiments (i.e. in the military people)' continues e.g. in Czech *Svatopluk*, Slovak *Svätopluk*, Polish *Świętopełk*, Russian *Svjatopolk*, and it is commonly used in these languages (Knappová 1985: 177; ESJS, vol. 15: 910).

Vęšteslavъ, -*a* is the name of the Czech prince Wenceslas recorded in the Wenceslas legend (also with the soft yer at the end). The first part of the compound is *vęšte* 'more', a comparative form of the adverb *mъnogo*, the second part is the adjective -*slavъ* 'famous' from *slava*, *slaviti*. The meaning of the word is 'more famous' (ESJS, vol. 18: 1059). We can find the name in most Slavonic languages, cf. Czech and Slovak *Václav*, Russian *Vjačeslav*, *Vaclav*, Polish *Wacław*, Serbian *Večeslav*, Croatian *Venceslav*; there is also German *Wenzslaus*, English *Wenceslas* from the Latinised form *Venceslaus*, Lithuanian *Vaclovas* etc.

Vladimirъ, -*a* is recorded as *Volodimirъ* in the Ostromir Gospels; it is the name of the famous Kievan prince who lived at the turn of the first millennium. The second part of this word is interpreted in different ways, similarly as e.g. Dragomira (q.v.). In this case, more probable is the Proto-Slavonic word **mirъ* 'world'. *Vladimirъ* was invited 'to rule the world', when he was baptized. The meaning of the name is 'the one who rules the world'. The name is popular in Slavonic languages, cf. Czech and Slovak *Vladimír*, Polish *Włodzimierz*, Bulgarian, Serbian, Croatian, Russian, and Ukrainian *Vladimir* (ESJS, vol. 18: 1066).

Voitěchъ, -*a* is the name of the second bishop of Prague, a member of the Slavník dynasty. It was preserved in the Prayer to the Holy Trinity regarded as a document of Czech origin, but it is recorded only in the Old East Slavonic transcripts. The first part of this compound name is the noun *voi* 'troops', the second part is a form of the sigmatic aorist *těchъ* 'he comforted' – *Voitěchъ* was the one 'who comforted troops' (see ESJS, vol. 18: 1074). The name is often used in Slavonic languages, cf. Czech *Vojtěch*, Slovak *Vojtech*, Polish *Wojciech*, Serbian, Croatian *Vojteh*, Bulgarian and Russian *Vojtech*.

Vratislavъ, -*a* is the name of the prince from the Přemyslid dynasty, Spytihněv's brother. It can also be found in various editions of the Wenceslas Legend and in the Old East Slavonic text of the Life of St Ludmila. It is another compound among the ones that contain -*slavъ* from *slaviti*, *slava* as its second part. The first part consists of the imperative of the Proto-Slavonic verb **vortiti* 'to come back', 'come back famous'. *Vratislavъ* is the one who 'gets back the fame' (ESJS, vol. 18: 1083).

Although compounding is not a very productive word-forming device in Slavonic languages as it is e.g. in Old Indian or Germanic languages, Slavs preserved the formation of first names by means of compounding as an Indo-European cultural inheritance. The names formed by connecting two lexical bases were created in the period when no surnames existed. They expressed the naming stimuli, which are in the most of their modern continuations faintly obvious, and described the bearer's mental and physical qualities, and his/her relationship towards other people and the surroundings.

Verbal compounds are frequent; the verbal form is used as the first part of the compound name. As the names as a whole express wishes, appeals, longing for positive qualities, the verbal part is often in the form of imperative (*Borivoi*, *Rastislavъ*, *Spytigněvъ*, *Vladimirъ*, *Vratislavъ*). As concerns the bases, we often have to take into account the form that may

fundamentally influence the etymological interpretation of the word (*Spytigněvъ*). The nominal forms quite often express the object of the wish or appeal. Usually the object of the wish related to fame (*Boljeslavъ*, *Izbraslavъ*, *Izęslavъ*, *Jaroslavъ*, *Rastislavъ*, *Vęšteslavъ*, *Vratislavъ*). The names *Borivoi*, *Voitěchъ* and *Svętoplъkъ* relate to fighting and to troops.

In the course of time, a shift in the understanding of the word occurs in some bases of the compounds; e.g. the original adjective base *jar-* 'hard, strong, etc.' in *Jaroslavъ* is now understood as the noun *jaro* 'spring'; quantitative Proto-Slavonic comparative **vętje* 'more', which is apparent in the Old Church Slavonic form of the name Wenceslas (*Vęšteslavъ*), is veiled in Old Czech and the modern Czech form of the name *Věnceslav*, and the first part of the name is understood as a genitive singular or nominative plural form of *věnec* 'garland'. The Old Church Slavonic first names also provide important historical information used as a means of assigning the name bearer to a certain social group. The ancient way of formation of the first names related mostly to names of nobility (e.g. Church Slavonic proper nouns *Borivoi*, a Czech prince, Old Church Slavonic *Dragomira*, a Czech princess, Church Slavonic *Izęslavъ*, *Jaroslavъ*, Kievan princes, Old Church Slavonic *Rastislavъ*, a Great Moravian prince, etc.). Simple forms of the names are usually shortened compounds or consist of one of their parts, and they relate to persons of a lower rank in the society (*Mъstina*, a member of the prince's retinue, *Stanъ*, *Retъko*, scribes), or to the people who reduced themselves to the lower level as a result of their behaviour (*Čъsta*, *Gněvisa*, killers). Some other names rank among different onymic fields (e.g. *Izbraslavъ* is a first name and a toponym); they are homonyms.

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Synaesthesia, onomatopoeia and the origin of language[*]

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Abstract: The article provides an overview of the notions of synaesthesia and on-omatopoeia and their relation to ideas about the origin of language. It reviews a wide range of views of language and other scholars, and offers some critical reflections. In conclusion, it proposes that the origin of language should be seen in a wider context than that of mechanisms of word or sign creation.

Keywords: synaesthesia; onomatopoeia; sound symbolism; echoism; origin of language; proto-language; sociality

1. Introduction: Synaesthesia as evidence for the onomatopoeic origin of language

In a well-known and wide-ranging discussion of synaesthesia, the neurologist, V.S. Ramachandran, has re-opened the issue of sound symbolism and its implications for our understanding of the origin of language. Ramachandran's remarks were first published in a joint article with E.M. Hubbard in the *Journal of Consciousness* (also available online) and were repeated in the 2003 Reith lectures (available online at <bbc.co.uk/radio4/reith2003>), and he wrote a useful review on neuro-cognitive mechanisms of synaesthesia in 2005. Ramachandran (2001: 4) describes synaesthesia as a "genuine perceptual phenomenon" involving "hyperconnectivity" or "extensive cross-wiring between brain regions". Sounds and colours, for example, may be associated in some people. Numerous different forms of synaesthesia have been investigated (e.g. graphemes and colours) along with literary and cultural aspects of the phenomenon. The brain processes involved in synaesthesia are explained by Eagleman (2009). Simner (2012) reviewed the differences in the definition of synaesthesia in the literature and the difficulties of arriving at a common definition. She concludes (2012: 25):

> Synaesthesia is characterized by the pairing of a particular triggering stimulus with a particular resultant experience. It affects a minority of people […]

She points out the differing experiences of synaesthetes with many manifestations, which are spontaneous and normal for the synaesthete. Others (such as Ramachandran) add that different parts of the brain are simultaneously affected.

Ramachandran presents an experiment similar to others carried out earlier in which subjects have to guess which of two figures in an imaginary language ("Martian" for the sake

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of the experiment) is named "kiki" and which "bouba". 95% of subjects associated "kiki" with a diagram with sharp angles and "bouba" with the rounded figure. This result was in line with the results of previous experiments referred to in the paper (e.g. work done by Kőhler done in the 1930s – also discussed by Firth 1957: 43 and 45) and is intended to show a natural, "wiring" connection between visual and sound perception. On the basis of these rather limited experimental findings (although many subsequent studies have produced similar results) and with little consideration of any other variables or relevant factors, Ramachandran tells us (2001: 4):

> This idea reminded us of the onomatopoeic theory of language origin ("bow-wow" = dog) but is quite different in that the relationship between the visual appearance of a dog and the sound made by a dog is completely arbitrary (unlike the "kiki/bouba example).

The alleged difference seems to be that the correspondence between object shape and "sound contours" is "non-arbitrary". According to Ramachandran, the synaesthetic correspondence "could be based on either direct cross-activation or mediated by the angular gyrus" (ibid.: 4). He also mentions cross domain mappings in, or close to, Broca's area between sound contours and motor maps, and motor to motor mappings involving, for example, links between hand gestures and the tongue or lip and mouth movements. Such ideas have a long history in the linguistic literature. He also proposes that synaesthetic experiences played a role in the origin of language.

2. The signifier-signified relation

Ramachandran's ideas inevitably point to a reconsideration of the ancient debate about whether language exists "phusei" or "thesei" and the role of onomatopoeia in the origin of language (see Crystal 1997 and Lyons 1977 for useful discussions). As is well known, the possibility of onomatopoeia is often held to be the potential exception to the generally "arbitrary" or, rather, unmotivated nature of the relation between the signifier and the signified. As Malmberg (1967: 10–1) says the only exception to the generally arbitrary or "unmotivated" relation of the signifier to the signified in Sausure's approach is "the existence in most languages of some sound-imitating words such as *buzz*, *splash*…". Saussure's view, which is similar to Whitney's (below) is most clearly found on pages 99–102 of the *Cours de linguistique générale* (1916, repr. 1972). He says (ibid.: 100):

> Le lien unissant le signifiant au signifié est arbitraire, ou encore, puisque nous entendons par signe le total résultant de l'association d'un signifiant à un signifié, nous pouvons dire plus simplement: *le signe linguistique est arbitraire* […] le principe de l'arbitraire du signe n'est contesté par personne[1].
> [The link joining the signifier to the signified is arbitrary, where again, since we mean by sign the totality resulting from the association of a signifier and a signified, we can

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[1] Of course, this *was* disputed extensively later on, among others by Lerch (1939) and Benveniste (1939).

say more simply: *the linguistic sign is arbitrary* […] the principle of the association of a signifier and a signified is not disputed by anyone. Trans. PR]

Nevertheless, Saussure finds it expedient to elucidate as follows, with reference in particular to onomatopoeia (ibid.: 101–2):

> On pourrait s'appuyer sur les *onomatopées* pour dire que le choix du signifiant n'est pas toujours arbitraire. Mais elles ne sont jamais des éléments organiques d'un système linguistique. Leur nombre est d'ailleurs bien moins grand qu'on ne le croit. Des mots comme *fouet* ou *glas* peuvent frapper certaines oreilles par une sonorité suggestive; mais pour voir qu'ils n'ont pas ce caractère dès l'origine, il suffit de remonter à leurs formes latines (*fouet* dérivé de *fagus* <hètre>, *glas* = *classicum*); la qualité de leurs sons actuel, ou plutôt celle qu'on leur attribue, est un résultat fortuit de l'évolution phonétique.
>
> Quant aux onomatopées authentiques (celles du type *glou-glou*, *tic-tac*), non seulement elles sont peu nombreuses, mais leur choix est déjà en quelque mesure arbitraire, puisqu'elles ne sont que l'imitation approximative et déjà à demi conventionnelle de certains bruits (comparez le français *ouaoua* et l'allemand *wauwau*). En outre, une fois introduites dans la langue, elles sont plus ou moins entraînées dans l'évolution phonétique, morphologique, etc. que subissent les autres mots (*cf. pigeon*, du latin vulgaire *pipio*, dérivé lui-même d'une onomatopée): preuve évidente qu'elles on perdu quelquechose de leur caractère premier pour revêtir celui du signe linguistique en général, qui est immotivé.
>
> [One might base oneself on onomatopoeic words to say that the choice of signifier is not always arbitrary. But they are never organic elements of a linguistic system. Moreover, they are fewer in number than is supposed. Words such as *fouet* ('whip') or *glas* ('knell') may strike some as having a suggestive sonority; but in order to see that they did not originally have this quality, one need only go back to their Latin forms (*fouet* from *fagus* ('hedge'), *glas* = *classicum*); the quality of their present-day sounds, or that which is attributed to them, is a chance outcome of phonetic development.
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> As for genuine onomatopoeic words (of the type *glou-glou* ("gurgle", "glug-glug"), *tic-tac* ("tick-tock"), not only are they not very numerous, but their choice is already somewhat arbitrary, because they are only the approximative, and to a certain extent conventional, imitation of certain sounds (compare French *ouaoua* with English *wuff-wuff*). Furthermore, once they are introduced into a language, they are more or less carried along in phonetic, morphological etc. developments, which other words are subjected to (cf. *pigeon* 'pigeon' from vulgar Latin *pipio*, itself derived from an onomatopoeic word); an obvious proof that they have lost their original character and acquired that of linguistic signs in general, which is unmotivated. PR]

One can see clearly that Saussure himself did not agree that onomatopoeia was an exception. His points are some of the standard and legitimate warnings against unscientific claims about onomatopoeia. Saussure was less concerned with the expressive nature of onomatopoeia and its role in language origins.

Malmberg, however, goes on to point out that onomatopoeic words are most closely associated with the expressive and address functions (ibid.: 176), i.e. those which are most obviously shared with other animals and which Popper (1972: 236) considers to be of a lower order.

Onomatopoeic connections have always been held to be "natural" rather than "conventional/arbitrary" and to be the kind of evidence adduced by those (like Herder see below) who favour a "natural" explanation of linguistic origins. It is, therefore, strange, that Ramachandran should wish to deny a connection with those precursors. Ramachandran, above, seems to be confusing the obviously sound-symbolic properties involved in synaesthetic connections with the use of imitative or sound-symbolic signifiers to function as signs with an arbitrarily attached signified. Many writers (see below) have distinguished those as different stages in language development.

3. Views on onomatopoeia

Onomatopoeia, as is well known, has been extensively studied in the context of language origins since at least the discussion in the *Cratylos* (as noted, for example, by Delbrück 1904: 28–9, 41ff, Hespersen 1922: 396, Buyssens (1967: 63), Ullmann 1972: 1). A simple explanation is provided by Bradley (1904). It is (1904: 154–5), "a noise, or the object producing it, sometimes makes its own name…that is…is denoted by a word formed in imitation of the sound". This makes it clear that onomatopoeia is a matter of a "natural" relation between the form and meaning of a sign. As many writers have pointed out, this may be the imitation of a sound or of a perceived appropriateness of sound to a particular meaning. It excludes the non-meaningful use of nonsense syllables in songs or poetry for the expression of emotion (e.g. *fa-la-la*, *ta-ra-boom-de-ay*, etc.) and simple imitations of noises not integrated into speech as words like *grrr!*, *wuff*, *brr!*, *to whit to woo*, etc., although such sounds can be used *ad hoc* (at least in English with its well-known freedom of grammatical category) to name sounds or actions – *the dog wuffed*, *don't "grr" at me!*, and so on (i.e. they can be integrated into the linguistic system, as Saussure (above) suggested). We can see this also in conventional imitations of sounds into speech as signs, such as *moo*, *miaow*, *splash*, *whack*. A marginal case may be presented by such invented expressions as Carroll's *slithy toves* (discussed, for example, by Firth 1957: 194ff as phonaesthetic modes of meaning), which are intended to behave as possible, but unknown, words.

An excellent review of the issues with an extensive literature survey was provided by Ullmann (1972: 80ff; 1975). Ullmann's account was largely followed by Lyons in his *Semantics* (1977: 101ff). Ullmann's account may be summarised as follows:

1. In most signs there is no obvious link between sound and meaning: the sign is "unmotivated"
2. In some cases there is motivation and this motivation may be either "direct" or "indirect"
3. "Direct" motivation is found "whenever the phonetic structure of a word imitates or evokes the referent". This is onomatopoeia and it may be divided into "primary" and "secondary".

4. "Primary" onomatopoeia, frequently called "echoism" by earlier writers, is where "the referent itself is an acoustic phenomenon", i.e. this is the case in which speech sounds are used to imitate natural sounds.

5. "Secondary" onomatopoeia, or "sound symbolism" may be a matter of purely subjective reactions or a more generally held appropriateness of sound for the meaning, where sound is referred to. For example, certain sounds or sound groups may be felt to have particular expressive qualities, e.g. *sl-* for smooth, wet things (*slop*, *slush*, *slime*, *slither*) or *-ash* for sharp movements (*dash*, *smash*, *flash*). This is clearly the kind of onomatopoeia that Ramachandran has in mind, i.e. the natural association of sound and tactile or visual characteristics. Another term for this has been "phonaesthesia" (see below).

6. "Indirect" motivation is also of two sorts – "morphological" involving composition or derivation for complex meanings rather than unanalysable or opaque simple signs and "semantic", i.e. metaphorical or metonymical expressions. Indirect motivation does not concern us here, and, in any case, the "relative motivation" here is a matter of grammatical economy, rather than a natural imitation.

Ullmann's account is full of useful examples and sensible and balanced discussion of ideas. It is a good summary of the previous literature. While onomatopoeia has been an issue for linguistic reflection since early times, it is reasonable to think the heyday for its discussion (and especially of sound symbolism) came between Max Müller's lectures (1871) and the beginning of World War II, although the topic has been revived by Hutchins (1999) and Bergen (2004) among others in the context of transformationalist approaches. Despite considerable online speculation on the "onomatopoeic origin of language" with lists of alleged examples, little or nothing has been added to the traditional discussion.

4. Onomatopoeia and speculation on the origin of language

Building partly on early Greek speculation that the origin of language lay in the imitation of sounds, in the 17th century onomatopoeia was discussed in the context of the concept of a universal character or artificially constructed language. As Salmon (1972: 22) points out, it was felt that a direct relation between words and things should be involved in naming which would be "in accordance with some natural order". Onomatopoeia, including sound symbolism, was held to have been a significant attribute of the "original language" ("an attribute [… which …] characterised any language Adam spoke") and hence "a desideratum for a universal language" (ibid.: 87). Salmon reports Mersenne's consideration of whether "a language might be invented where sounds were symbolic" (ibid.: 90) and mentions examples such as the sounds [a] and [o] for large round objects and [i] for very small ones. According to Salmon, these ideas were found in the works of others including Lodwick, Comenius, Dalgarno and Boehme. Ullmann (1972: 80) reminds us that Leibniz also took the view that onomatopoeia was the "primeval form of human speech" and connected it with the naturalist account of the origin of language.

   Locke, on the other hand, in this period was strongly of the view, adopted by most linguists since, that the relation of form and meaning was a conventional one. He gives little attention to instances of onomatopoeia and says (first appeared 1689, 1960: 259):

> Thus we may consider how *words* […] come to be made use of by men as the signs of their ideas; not by any natural connexion that there is between particular articulate sounds and certain ideas, for then there would be but one language amongst all men; but by a voluntary imposition, whereby such a word is made arbitrarily the mark of such an idea. The use, then, of words is to be sensible marks of ideas […]

The origin of language activity is considered by Locke to arise from an intelligent need to communicate. As he says (ibid.: 256):

> Besides articulate sounds, it was necessary that he [man] should be able to use these sounds as signs of internal conceptions, and to make them stand as marks for the ideas in his own mind, whereby they might be made known to others, and the thoughts of men's minds be conveyed from one to another.

These ideas are not dissimilar to those of Herder, although it is Herder who provides the best-known and subtlest defence of the naturalist position on the origin of language and, with it, description of the role of onomatopoeia at least in the early stages of the development of language. His *Abhandlung über den Ursprung der Sprache* (1772) (*Treatise on the Origin of Language*), as is well known, was extensively discussed by, among others, Müller (1871: vol. 2: 407ff), Delbrück (1904: 28), Whitney (repr. 1979: 283ff), Sturtevant (1917: 130), Jespersen (1922: 396) and Ullmann (1972: 80ff, 1975: 5ff). Herder gives very few examples as evidence of his views, but his position shows a good deal of subtlety. He places the origin of language in the context of his view of human nature and its sensitivity to the sounds in the environment ("Naturtőne"). He asserts that, "in allen Sprachen des Ursprungs tőnen noch Reste dieser Naturtőne" (ibid.: 9) ["in all original languages, remnants of these natural sounds can be heard", PR]. Nevertheless, he rejects the idea that simple imitation or unarticulated expression could account for the origin of human speech, i.e. Herder says it is false, "aus diesem Geschrei der Empfindungen den Ursprung menschlicher Sprache zu erklären" (ibid.: 16) ["(to try to) explain the origin of human languages from these cries of the feelings", PR]. This suggests that he felt primary onomatopoeia was at best an early phase in the proto-language. This may be also what Ramachandran has in mind. It is a view also expressed by Whitney (see below). Herder insists on the *qualitative* difference between humans and animals. According to him, "die Menschengattung über den Tieren nicht an Stufen des Mehr oder Weniger stehe, sondern an Art […] In diesem Falle würde die Sprache dem Menschen so wesentlich, als – er ein Mensch ist" (ibid.: 25) ["the human species does not stand above the animals in gradations of more or less, but in type […] As such, language would be just as integral to a human as being human is", PR]. The whole of human nature according to Herder is directed towards language behaviour and this "Einrichtung […] menschlicher Kräfte" ["arrangement of human powers", PR] involves imitation of nature ("man hat ein Principium angenommen die Natur und also auch ihre Schälle nachzuahmen" (ibid.: 34)) ["a principle of imitating nature and also its sounds has been adopted", PR] but this is done in an intentional, rational and communicative way as part of our social behaviour. He says (ibid.: 17), "wenn kein Verstand dazukommt, diesen Ton [i.e. imitated sounds] mit Absicht zu brauchen, so sehe ich nicht, wie […] je menschliche, willkürliche Sprache werde" ["if no reason is involved to deliberately use these (imitated) sounds, then I cannot see how

[…] human, arbitrary language could emerge", PR]. Thus, while imitation is clearly central to Herder's account ("von jedem tőnenden Wesen klang sein Name" (ibid.: 47)) ["from every sound-making being rang out its name", PR], this was but a step towards conventional sign behaviour and that requires intelligence of the human sort. This intelligence involves the recognition of indices – Herder's example is the bleating of a sheep (ibid.: 33) – which leads to the naming of aspects of experience with conventional signs. The sheep is "the bleating one". Clearly, this intelligent sign behaviour is qualitatively quite different from simple imitation. Herder's view is an early (and rather limited) version of the idea that language involves the whole brain as a human evolutionary adaptation (Foley 1997: 74, for example, says that language has "colonized" the brain).

5. The "proto-language"

One thing that is missing from this account, and from Ramachandran's, is any explanation of what sort of entity the "proto-language" as a stage in the development of language might have been. Or, indeed, of how conventions might emerge- presumably not by early humans sitting around in committee deciding on names or having "the first man" deciding on them, as in the biblical myth. Language would have been needed to arrive at any naming conventions. It is far more likely that communication started to include a representational function for referring to the external world (itself an unexplained qualitative leap), and that particular signs arose and spread as behavioural memes, just as new behaviours arise and spread among existing primates and some corvids.

Furthermore, in the above accounts, we never learn what sort of communication system is envisaged and in what sense a "proto-language" can be said to be a *language* at all. After all, an unordered set of imitative cries might be a kind of semiotic system, but it is a long way from articulated communication with conventional phonological and grammatical potentialities, an extensive semantic structure, or discoursal conventions, let alone the potential to provide a virtual model of any aspect of reality. What is clear is that some writers have seen an imitative and sound-symbolic activity as a primitive step towards language or as a part of that progression. That *may* have occurred in the earliest stages of memetic cultural transmission.

This view seems to have been shared by Darwin, who was impressed by the role of imitation in human society as a mechanism for the development of mental faculties and, in particular, of language. He writes (1894: 87):

> I cannot doubt that language owes its origin to the imitation and modification of various natural sounds, the voices of other animals, and man's own instinctive cries, aided by signs and gestures. When we treat of sexual selection, we shall see that primeval man, or rather some early progenitor of man, probably first used his voice in producing true musical cadences…as do some of the gibbon-apes at the present day; and we may conclude…that this power would have been especially exerted during the courtship of the sexes.

Darwin saw imitation as an early stage on the road to language development and emphasises the role of what we would now call "positive feedback" (see Rastall 2000: 158–9 for further discussion of this phenomenon) in the co-development of language and reason and says (ibid.: 87):

> As the voice was used more and more, the vocal organs would have been strengthened and perfected through the principle of the inherited effects of use; and this would have reacted on the power of speech[2]. But the relation between the continued use of language, and the development of the brain, has no doubt been far more important. The mental powers in some early progenitor of man must have been more highly developed than in any existing ape, before even the most imperfect form of speech could have come into use; but we may confidently believe that the continued use and advancement of this power would have reacted on the mind itself, by enabling and encouraging it to carry on long trains of thought.

Thus, Darwin, like Herder earlier, saw imitation as a natural mechanism in the early stages of communication development in humans, but linked the advancement to real language with intellectual capacity. Later (ibid.: 129), Darwin links imitation (of others in the social group) to the process of acquisition and spread of language behaviour:

> It deserves notice that, as soon as the progenitors of man became social (and this probably occurred at a very early period) the principle of imitation, and reason, and experience would have increased, and much modified the intellectual powers…

Clearly, Darwin believed the development of language to have been an adaptation for survival which was one of the developments of human reason and imitative ability, and that the adaptation in question was closely linked to socialisation as a survival mechanism. The view that language emerged through sociality as an adaptive development and that it came to be the dominant evolutionary strategy in humans has been developed by Dunbar in his "social brain hypothesis" (e.g. 1998, and Maslin 2017). The wider, and highly pertinent, question of the environmental conditions in response to which human mental powers, including language, developed as survival mechanisms is framed, but not answered, by Darwin (ibid.: 5–6):

> The enquirer would next come to the important point, whether man tends to increase at so rapid a rate, as to lead to occasional severe struggles for existence; and consequently to beneficial variations, whether in body or mind, being preserved, and injurious ones eliminated.[3]

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[2] Darwin was presumably unaware of the crucial role of the hyoid bone for speech development.

[3] Darwin does not consider the possibility of natural disaster here. We now know that mankind may have been greatly reduced in numbers by global catastrophe in the form of ice ages. Could this have promoted greater social grouping and collaborative activity, thus enhancing the role of communication skills for survival?

Placing language development in the wider evolutionary context puts simple imitation into perspective, although the social functions of language were rather underestimated by Darwin. We now know much more about the social and communicative behaviour of other primates for comparison with our own. If Ramachandran is right about sound symbolism or the role of synaesthesia in language origins as mechanisms for language development, he will have to place them in the evolutionary context of the enhancement of intellectual skills and brain development and the conditions which favoured that adaptation.

6. Views on onomatopoeia and sound symbolism

Müller, whose lectures were discussed by Darwin (ibid.: 87ff), addressed Herder's account in his *Lectures*. After describing Herder's views in the context of what he called the "bow-wow" theory of the origin of language (noted by Ramachandran), in which "roots are imitations of sounds" (1871: 407), he expresses (ibid.: 409) what has become the mainstream modern view that:

> Though there are names in every language formed by mere imitation of sound, yet these constitute a very small proportion of our dictionary […] they are the playthings, not the tools, of language and any attempt to reduce the most common and necessary words to imitative roots ends in complete failure.

Müller, like Saussure, goes on to note that the direct imitation of sound in *bow-wow, moo* or *oink* is marginal to communication (in representing reality dogs *bark*, cattle *low*, pigs *grunt*) or, if integrated to the linguistic system, it is highly conventionalised in phonological form (ibid.: 410) – animal sounds are differently represented in different languages (English pigs go "oink"; Swedish ones, I am told, go "nőf, nőf") - and that apparent motivation can be both gained and lost in the course of diachronic development (ibid.: 411). Thus, one cannot link expressiveness with primitiveness. The latter is a point made clearly also by Ullmann and others (below).

   Whitney (repr. 1979: 284ff) accepts Herder's view that imitation is "the positively earliest speech" but that real human language involves a qualitative leap. Whitney addresses the theory of "the imitative origin of language" and points out that, as far as we can tell through historical studies, onomatopoeia was not "predominant in the early traceable stages of language" (ibid.: 296). Of course, Whitney had all the resources of 19th century empirical scholarship to combat Herder's speculations, although his position is not in fact so different. For Whitney (ibid.: 283) communication "turns the instinctive into the conventional" through the "intent to signify something" (ibid.: 284) and language is for him "in all its parts arbitrary and conventional" (ibid.: 282), i.e. there is a major qualitative (ontological) distinction between imitation of sound and symbolic representation by means of semiotic systems (although no mechanism is offered for this very significant qualitative leap). He points out that a cow's moo conveys the internal state of the animal but (the sentence) *the cow mooed* refers to the action of mooing, not to the cow's state. This is, of course, a part of the integration of

a conventional representation of sound into the communication system and its use in conventional grammatical contexts. It is the conventionality of languages that impresses Whitney (like Saussure) the most. As he says (ibid.: 282):

> There is not in a known language a single item which can be truly claimed to exist *phusei*, "by nature": each stands in its accepted use *thesei*, "by an act of attribution" in which men's circumstances, habits, preferences are the determining force. Even where the onomatopoeic or imitative element is most conspicuous – as in *cuckoo* and *pewee*, *crack* and *whiz*- there is no tie of necessity, but only of convenience: if there were a necessity, it would extend equally to other animals and noises; and also to all tongues; while in fact these conceptions have elsewhere wholly other names.

Whitney asserts, then, that even onomatopoeic words are in fact parts of the normal conventional sign system. This was also Saussure's view (above). Whitney is prepared to accept that there may be some element of sound symbolism – "a figurative use of imitation, whereby rapid, slow, abrupt, repetitive motions are capable of being signified by combinations of sounds which make something such an impression on the mind through the ear as the motions in question do through the eye" (ibid.: 296) – but rejects "that most absurd doctrine, the absolute natural significance of articulate sounds and the successful imitation of complex ideas by a process of piecing these elements together" (ibid.: 296).

An important point made by Whitney was that onomatopoeic words are "by no means all old" (ibid.: 120) and thus the imitative nature of a word does not imply its antiquity or that it is, as Herder (above) supposed, a remnant of the proto-language. Rather, at all times and places, there is some imitative element in word-formation, however conventionalised. It is this expressive tendency, which may have some synaesthetic aspects, which appears to be universal. The relative newness of some onomatopoeia is a point made very clearly by Bradley in his discussion of "root-creation". He points out (1904: 155) that many examples of onomatopoeia in English arose in Middle and Early Modern English (*bang*, *boo*, *boom*, *cackle*, *fizz*, *hiss*, etc.) and says (ibid.: 154):

> Few […] are aware how large a proportion of the English vocabulary has […] no etymology at all […] neither inherited from Old English, nor adopted from any foreign language, nor formed out of any older English or foreign words by any process of composition or derivation […] One of the principal forms of root-creation is […] onomatapoeia.

The point was repeated by Potter (1950: 78–9). Bradley, who, along with others, such as Pearsall-Smith and Müller rejects the terms onomatopoeia and onomatopoeic as misleading, uses the terms "echoism" and "echoic" (according to Bradley originally coined by Lindley Murray), and points out the conventional phonological nature of any imitation of sound. He says (ibid.: 156), "the imitation of inarticulate by articulate sounds can never be accurate […] in general the rendering of noises into the sounds of human speech involves some play of fancy" and not "similarity of impression on the ear as in similarity of mental impression". As he says, guns do not really go *bang*.

Unlike Whitney, and in speculations similar to those of Ramachandran, Bradley emphasises the role of sound symbolism. He appears to mean here the expressive or aesthetic aspects of Ullmann's secondary onomatopoeia. He says (ibid.: 156–7), "we often feel that a word has a peculiar natural fitness for expressing its meaning though it is not always possible to tell why we have this feeling". He points out that sounds can be suggestive of movements or shapes in terms reminiscent of Ramachandran's synaesthetic connections. He mentions, *inter alia*, long vowels for slow movements, repeated consonants for repetition of movement, close vowels as "suited to convey the notion of something slender or slight" and "oo" for massive objects. He adds (ibid.: 157), "sequences of consonants which are harsh to the ear, or involve difficult muscular effort… are felt to be appropriate in words descriptive of harsh or violent movement". While little hard evidence is offered for these views and, as several writers have pointed out (see below), there are obvious counter-examples and uses of the same sounds for quite different referents, Bradley took the view that, "the inherent symbolism of sounds […] probably had a large share in the primary origin of human language" (ibid.: 158). It is unclear whether Bradley intended a distinction such as that of Whitney (and possibly Ramachandran) between a very primitive proto-language and human language (as we know it now and assume it to have been in all genuinely human societies). However that may be, Bradley was clearly guilty of attributing a primeval quality to the formation of words which are felt to be appropriate in sound to their meanings. He ignores the possibility that the sense of appropriateness may be language-specific or that it might develop through frequent association (see below) or that there may be either gain or loss of motivation, as Ullmann points out following Saussure and Sturtevant (1917: 130).

Several writers followed Bradley in speculating on sound symbolism. Among those, Pearsall-Smith (1912 and 1925) was prominent. As mentioned above, he was among those who objected to the term "onomatopoeia" because (1912: 101–2):

> The imitation of natural sound by human speech can never be an absolute imitation, although some of the cries of birds and animals have almost the character of articulate speech: and in words like *cuckoo* and *miaow* we do approach something like perfect imitation […] for the most part the sounds of nature have to be translated into articulate sounds which do not imitate them, but which suggest them to the mind.

Pearsall-Smith also prefers the term "echoism" to cover this approximation by conventional phonological means.

He distinguishes echoism from the "symbolism of sounds" or "the suggestive power of various combinations of vowels and consonants" (ibid.: 102). His list of sound symbolisms (ibid.: 1033ff) is similar to Bradley's and includes numerous reduplications (for a classification and discussion of reduplication, see Rastall 2004) as well as the suggestions that: long vowels "suggest a slower movement than shorter vowels and "open mouth vowels… convey the idea of more massive objects, while those which are formed by nearly closing the lips suggest more slight movements or more slender objects". As for consonants, he mentions, in English for example *qu-* for shaking movements (*quake, quiver*); *bl-* for impetus (*blow, blast*), *fl-* for impetus or slow, clumsy movement (*flounder, flop*); *gr-* for grumble or "something of the same meaning" (*groan, grunt, grudge*); end occlusives for abrupt stoppages

(*snap*, *flap*); *-sh* for smashing or rustling sounds (*clash*, *splash*); and *-mp* for duller and heavier sounds (*bump*, *dump*). These combinations are similar to those claimed by Bloomfield (1933: 245) as part of a "system of initial and final root-forming morphemes of vague signification", e.g. [sl-] ("smoothly wet"; *slime*, *slither*, *slop*, *sludge* – but note *slay*, *slog*, *slate*, etc.). Harris (1973: 69–70) criticises the implausibility and self-contradiction of this as a *morphological* analysis. Nevertheless, although Pearsall-Smith's position may be exaggerated, there is some tendency towards language-specific sound symbolism at least with some associative meaning or aesthetic/expressive function. As it is not difficult to find counterexamples (as above), presumably Pearsall-Smith and others are not claiming that sound symbolism is a necessary characteristic of the phonological features in question or that signs necessarily require sound symbols, but that such properties may occur or be felt to occur. It is interesting that Ullmann quotes Grammont as saying (with Gallic coolness), "un mot n'est une onomatopée qu'à condition d'être senti comme tel" (1975: 88) ["a word is not onomatopoeic unless it is felt to be so", PR], which points to the language-specific conventionality which "enters into the most onomatopoeic formations" (1975: 86).

It is precisely these "phonaesthetic" properties of sounds and sound combinations which recent writers such as Bergen (2004) have been concerned with. Bergen aims to establish the "psychological reality" of "phonaesthemes". The examples given are similar to those considered by Bloomfield, Pearsall-Smith, Bradley and Firth. While acknowledging the phenomenon of the phonaesthetic functions of sound (which he regards as "rather vague"), Firth (1957: 44ff) is at pains to point out:

> I am far from suggesting that there is anything in all this of Humboldt's inherent sound symbolism, or what Dr. Wolfgang Kőhler [also referred to by Ramachandran] calls "similarities of experiences through different sense organs", "the qualities of different senses being comparable" and associated, or what Swinburne called "the mixing of the senses in the spirit's cup".
>
> I merely state what I believe to be a fact – namely, that a definite correlation can be felt and observed between the use and occurrence of certain sounds and sound patterns (not being words in the ordinary sense) and certain characteristic common features of the contexts of experience and situation in which they function.

Firth uses the term "phonaesthetic" to describe this correlation (1957: 194) "to avoid the misleading implications of *onomatopoeia* and the fallacy of sound symbolism". Firth's sober judgement seems to be that what is called sound symbolism are language-specific, associative aspects of meaning which arise from similar correlations of the signifier (or part signifier) and common features of the signifieds. He was particularly concerned with such features as alliteration, assonance and "chiming" (rhyming reduplication) here. Trubetzkoy's term for these phenomena was "phonostylistics" (1969: 14ff and 257ff). (The work by Bergen and Hutchins is an attempt to show *cross-linguistic* features of such correlations.)

Interestingly (and by contrast with Firth), Pearsall-Smith gives a synaesthetic explanation for this "suggestive power" of words, which he thinks is due (ibid.: 104) "partly to direct imitation of natural sounds but more to the movements of the vocal organs and their analogy with the movements we wish to describe", i.e. he associates (as does Ramachandran), sound qualities with vocal organ movement and visual appearance. Pearsall-Smith is well aware

that the examples of these symbolisms are language-specific and offers an explanation for some of the developments through association (ibid.: 104):

> A common word established in the language describes a sound or action and its sound comes to be connected with the thing that it describes. Other words are formed on its model and finally the expressive power of the sound, suggesting as it does so many other words of similar meaning, becomes part of the unconscious heritage of those who use the same form of speech.

If Pearsall-Smith is right here, it is an important point, i.e. it means that what is a universal characteristic is not the symbolic value of particular sounds for particular meanings, but the tendency to develop expressivity through perceived, possibly conventionalised language-specific associations.

Pearsall-Smith also follows Bradley in pointing out the recent origin of many "echo words" (1925: 145):

> By far the greater number of new words of popular formation are not made of old material, but are new roots, fresh formations made out of expressive sounds, and products of the true onomatopoeic faculty. The publication of the *Oxford Dictionary* has brought to light the fact that our language during the whole course of its history has been continuously enriched by "echo" words […]

Thus, even if the origins of language are not to be sought principally in onomatopoeia except at a very primitive stage, because huge areas of the vocabulary do not show any onomatopoeic properties, and there are easily found exceptions to Pearsall-Smith's examples, there does seem to be a natural tendency to make the expression correspond to the content in conventional and language-specific ways. It is that, perhaps, which led Jespersen, while repeating the *caveats* of his precursors, to assert (1922: 396):

> The idea that there is a natural correspondence between sound and sense, and that words acquire their contents and value through a certain sound symbolism, has at all times been a favourite one with linguistic dilettanti, the best known examples being in Plato's *Kratylos* […]

While rejecting many explanations as "ridiculous and absurd", Jespersen still concludes that "this does not justify us in rejecting any idea of sound symbolism" (ibid.: 396) and that "the suggestiveness of some words as felt by present-day speakers is a fact that one must take into account if we are to understand the realities of language" (ibid.: 408). Jespersen discusses several of the above-listed types of sound symbolism with due caution. For example, he points out the short close vowel in both *little*, as predicted, and in *big*, and the fact that the same vowel occurs in both *thick* and *thin*. Such examples clearly show that sound symbolism is indeed something which is sporadically felt by speakers as part of their training to be "expressive" rather than a necessary principle of root-formation. Jespersen introduces the Darwinian idea, adding to Pearsall-Smith's positive feedback explanation, that "sound symbolism […] makes some words more fit to survive and gives them considerable help in their

struggle for existence" (ibid.: 408), although experimental support for this is lacking. Expressivity might be seen, then, as a kind of reinforcement, which entrenches usage.

7. Views on the origin of language

Linguists since the *Junggrammatiker* have typically shied away from speculation about the origin of language, and have generally been dismissive of onomatopoeia as a significant force. There are good reasons – both diachronic and synchronic- for doing so (as we have seen). Motivation is gained and lost; it is language-specific; even obviously onomatopoeic words are conventionally integrated into the phonological and grammatical systems of languages; generally onomatopoeic words do not just imitate sounds – they name them or their source; it is easy to find counter-examples; speakers may or may not perceive sound symbolism; and the role of onomatopoeia appears to be marginal compared with the overwhelmingly conventional nature of natural languages in all their systems and sub-systems. As Lyons says (1977: 101):

> What is traditionally called onomatopoeia […] is a universally recognised exception to the generality of the Saussurean principle of the arbitrariness of the linguistic sign; and onomatopoeic forms constitute only a small minority of the word forms in any language system. Furthermore, there is some arbitrariness, or conventionality, even in onomatopoeic forms, since they are made to conform to the phonological systems of particular languages, rather than being directly imitative of what they […] stand for.

Lyons makes a similar point about sound symbolism (ibid.: 104) – "insofar as it exists, sound symbolism appears to be restricted to a relatively small part of the vocabularies of languages".

While there is no denying all of those points, linguists might well be left with the same sense of discomfort that Jespersen and Firth (above) obviously felt. The feeling for expressivity of primary and secondary onomatopoeia, illustrated by Ullmann and others, along with a tendency to imitate naturally occurring sounds and to build them into phonologically well-formed units, appear to be common to all languages and to occur at all times. These are inherently non-conventional, emotive or associative aspects of meaning. There is, of course, a huge quantitative and qualitative gap between the simple imitation of naturally occurring sounds, or the synaesthetic association of sounds with movements, colours, or sensations, and the complexities of natural languages, but speculation on language origins can be controlled by placing it in an evolutionary and biological framework, and recognising the different semiotic properties of proto-communication (on the one hand) and unmotivated and complex sign systems (on the other). At the least, it is hard to ignore a long tradition of "natural" explanations, including onomatopoeia, as part of filling that gap.

8. Conclusion

While it is clear that natural languages are overwhelmingly conventional sign systems (taking the view of Locke, above), one must address the fact that language developed "naturally" in the sense that human beings are part of the natural world (following Herder and Darwin, above), and that language developed as an evolutionary adaptation for survival. While echoic or sound symbolic effects may have played some role in early root-formation and synaesthesia may have contributed, it should be clear that language is far more than the adoption of sets of signs as behavioural linkages between sounds and real-world referents. It is inherent to human sociality, interpersonal relations, cognition, and cooperation, and involves many relational expressions, abstractions and the capacity to join ideas. If we compare natural languages with the communication of our nearest living relatives, chimpanzees, it is obvious that there is an enormous qualitative gap between communication with a repertoire of inarticulate, simple signs, mainly for expressive and appellative/interpersonal functions with few representational signs, and human language with all its phonological, grammatical, semantic, pragmatic complexity, and capacity for "universal purport" (you can say anything that can be thought and think anything that can be said). Languages are massively complex systems requiring huge amounts of energy to maintain them and combat entropy ("a complex adaptive system" according to Steels 2011). Their transmission to the young is of immense importance and requires huge efforts; such is their evolutionary significance to humans.

Natural languages allow us to create a virtual world for social organisation, control of the environment, and exploration of ideas. In attempting to sketch a map between the "proto-language" and natural language as we know it, we must explain how those qualitative developments took place in a biologically credible way; how conventionality emerged naturally from less complex systems (as Popper, above, implied). The most promising approaches appear to be through understanding the development of sociality (Dunbar, 1998), trying to see how positive feedback and memesis could lead to exponential development of language skills, and (perhaps) how sexual selection may have favoured the most skilful communicators (Rastall, 2018). If we agree that there is no teleology in evolution, i.e. that its direction is "blind", it can be suggested that language is an accidental by-product or emergent property of a particular form of social-adaptive behaviour. We also need to consider just how early this development took place, as Darwin pointed out. It seems increasingly likely, for instance, that *homo sapiens* was not the only hominin with advanced language skills. Humans emerging from Africa interbred, and formed family groups, with Neanderthals (who are known to have had the FOXP2 gene critical for language pathway development) and denisovans (who developed from and interbred with Neanderthals); west African *homo sapiens* did the same with the "ghost population"- could that have happened without the ability to communicate (even if humans were more advanced at, or committed to, verbal communication as a survival strategy)? If not, then the origins of language must be far more remote than we previously thought, and any role for onomatopoeia (or synaesthesia) must pre-date modern *homo sapiens* quite considerably. While *homo erectus* appears to have been incapable of speech (lacking the vocal apparatus), it was a highly social and advanced animal, probably with a complex form of communication. The issue of word or root formation must be set in a much wider context of language and communicative development.

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