Technology and Language Технологии в инфосфере.
2021. 2(1). 26-36
https://doi.org/10.48417/technolang.2021.01.03

Special Topic: ***In the Beginning was the Word – The Word as a Technical Artefact***

Decaying Words: The Metaphor of Evolution in Language Becomes Literal in a Canadian Forest

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Abstract
In 2009, two Canadian poets Stephen Collis and Jordan Scott travelled to five different ecosystems within the borders of British Columbia (BC). At each location, they left a copy of the canonical text of physical anthropology, Darwin's *Origin of Species* (1859), open to the elements, for one calendar year. The project, documented in the photographic book *Decomp* turned the poets' usual mode of expression on its head: instead of manipulating words to create a final work of linguistic expression, the poets let nature dissolve the integrity of the book, leaving words and morphemes dangling in poetic fragments. The *Decomp* project allows us to reflect on the environmental influences on language, and the organic structure of language. The dominant metaphors that describe language come from the biological world, and from Darwin's theory of evolution in particular. Languages can be said to evolve, mutate, grow, stagnate and even die. Like the words in Darwin's text left to the elements, languages can be isolated by geographic factors and left to fossilize without continued exchange with other cultures. In the forests B.C. the metaphorical mapping between biology and language becomes literal. We bear witness to the effects of entropy on the book and as the line between animate and inanimate agents blurs. As the poets piece together the fragments of Darwin's prose in *Decomp*, we are confronted with such questions, confronted with the ephemeral nature of language and the acts of assembly we all perform every day in the face of linguistic change, and often, decay.

Keywords: Evolution; Metaphor; Poetics; Materiality; Anthropology; Darwin

Аннотация
В 2009 году два канадских поэта Стивен Коллис и Джордан Скотт побывали в пяти различных экосистемах Британской Колумбии, где оставили книгу Ч. Дарвина "Происхождение видов" на один год. Этот проект, задокументированный в фотокниге "Decomp", перевернул привычный способ выражения поэтов: вместо того, чтобы манипулировать словами для создания финального лингвистического произведения, поэты позволили природе разрушить целостность книги. Проект "Decomp" позволяет задуматься о влиянии окружающей среды на язык и органической структуре языка. Доминирующие метафоры, описывающие язык, происходят из биологического мира и, в частности, из теории эволюции Дарвина. Можно сказать, что языки развиваются, видоизменяются, растут, стагнируют и даже умирают. Подобно словам в тексте Дарвина, языки могут быть изолированы и окаменеть без постоянного обмена с другими культурами. Метафорическое взаимодействие между биологией и языком становится буквальным, грань между живыми и неодушевленными агентами стирается. Как собираются фрагменты текста Дарвина в "Decomp", мы постоянно собираем язык перед лицом языковых изменений, а часто и упадка.

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DECOMPOSITION

In late 2009 and early 2010, observant hikers in the wilds of British Columbia might have noticed, tucked under a tuft of moss or hidden underneath a boulder, a copy of Charles Darwin's (1859) *Origin of Species*, left open to the elements. The canonical text of evolutionary anthropology was left there, on purpose, by two Canadian poets, Stephen Collis and Jordan Scott. Exactly one year later they went back to see what had had become of the books.

The project, documented in the photographic book *Decomp* (Collis and Scott, 2013) turned the poets' usual mode of expression on its head: instead of manipulating words to create a final work of linguistic expression, the poets let nature dissolve the integrity of the book, leaving words and morphemes dangling in poetic fragments. "I'm not going to put the natural into the text," writes Jordan Scott, one of the poets, "I'm going to put the text out into the natural world and see what happens to it" (Collins & Scott, 2013, p. 3). The project recasts printed words as organic elements in an organic system.

The degree to which a physical environment can influence a language can be explored here in an absurdly material way. According to Sapir (1912), a specific environment can affect a language in three ways: at the level of vocabulary; at the level of the phonetic system; and at the level of syntax and morphology (p. 228). He is, of course, talking about the effect of environment on a *spoken* language, not on written artifacts like books. For a spoken language, it is obvious that a speaker's surroundings influence the words they use, both in the collection of words that has been assembled over time to refer to the objects in the vicinity, but also in the way that words are chosen as conversation unfolds in real-time and speakers react to changes in their environment. At a phonemic and morphological level, though, Sapir (1912) argues that language is largely independent of environmental effects (p. 234).

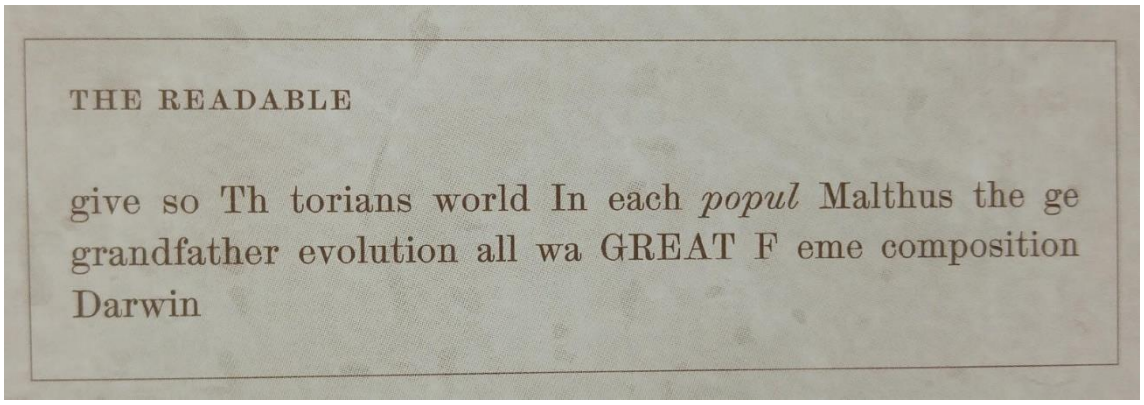

Figure 1. Collis and Scott typeset found scraps of Darwin's (1859) *Origin of Species* into forms of found poetry in *Decomp* (2013).

In the weathered pages of Darwin's *Origin of Species*, a material manifestation of the English language, we see the exact opposite effect. Because words have been written into a material form, they are subject to the material ravages of the environments. Darwin's vocabulary remains intact, frozen in time at the moment of writing, but his carefully chosen syntactical and morphological structure is compromised. The poets delight in finding fragments of sentences that emerge from the detritus, a remix project collaboration between non-human agents. "give so Th torians world In each *popul* Malthus the ge grandfather evolution all wa GREAT F eme composition Darwin," 'reads' one fragment displaying an eclectic mix of punctuation and word fragments (Collins & Scott, 2013, p. 45). "the hope th little ho natur ing ed if we among accumulated over ensoul-ment thoughts," reads another, a fragment that includes intact morphemes that have been severed from their root words, floating, waiting to be reattached to roots they can imbue with meaning (Collins & Scott, 2013, p. 22). Plato's distinction in *Phaedrus*, meant as a criticism of the practice of writing, between the "living and dead word" (Jowett, 2008) collapses here: the dead words are living again, themselves imbued with vitality through the agency of the forest.

ISOLATION

The two poets are engaged in a literal manifestation of what Sapir (1912) calls "linguistic archaeology" (p. 232). They re-discover these books as artifacts signifying human activity, permanently altered by their state of isolation away from other books and other people. "Where one book was left, amidst some rocks, under ponderosa pine, just up the dry slope from the sagebrush and grasslands," write Collins and Scott (2013), "we found at first only the word *species*, isolated and torn from the book" (p. 30). The signifier here becomes iconic of the signified: a self-contained unit subject to the forces of change.

Figure 2. The word "species" becomes an iconic, self-contained signifier of its signified concept in the natural environment of British Columbia.

This theme of isolation features strongly in the study of languages. Linguist Edwin Doran (1954) draws our attention to the language of the Cayman Islands, "a curious mixture of an archaic form of English with fragments of Negro dialect, Spanish forms, and expressions common to the Southern United States, as well as a remarkable number of nautical words," (p. 82). The early inhabitants of this cluster of islands, located between Jamaica and Cuba, were an eclectic mix of pirates, ship-wrecked sailors from England, and slaves brought through the Middle Passage. The islands are remote and did not feature as stops on any well-populated trade circuits, and as such, their language largely froze in time. Doran (1954) identifies phonemic peculiarities, such as the islanders' tendency to substitute /w/ for /v/ at the beginning of syllables, such as wessel for vessel, or wulgar for vulgar, a trait common to Elizabethan cockney (p. 83). Cayman vocabulary is also heavily laden with 17th and 18th-century nautical terminology including *windward* to refer to the East end of the island, and *fathoms* to measure the lengths of roads (Doran, 1954, p. 84).

But of course, the isolated environment of the Cayman Islands provides a different kind of environmental influence from what Sapir had in mind. The Cayman dialect has the features it does because of historical contingencies, such as the glaring ethical breech of transporting humans over the Atlantic Ocean to work as slaves, not because wind and rock have sculpted form into the islanders' words over time. The wind and rock from British Columbia can, however, and do sculpt words out of book pages, in only one years' time, much to the delight of our itinerant poets.

ENTROPY

The poets reveal a sense of glee in watching the sacred texts of an entire discipline succumb to the elements, especially when there are so many references to such elements within the pages. The signified takes revenge on the signifier, any gap between the two collapsed under the force of "heaving frost," (Collins & Scott, 2013, p. 101) "insect armies," (Collins & Scott, 2013, p. 120) and "red nature" (Collins & Scott, 2013, p. 94).

But with too much reflection, glee can turn to melancholy, as the initial rush of destruction wears off. "It is certainly true that words are transformed. They no longer signify shadow, earth," writes Maurice Blanchot, as quoted in Collins and Scott (2013), "an accumulation of syllables that have lost all meaning." (p. 123) There is an inevitability to the decomposition of the books, just as there is an inevitable decomposition, over time, of our languages, our cultures, and of course, our physical bodies. Claude Lévis-Strauss (1955) half-jokingly suggested in the pages of *Tristes Tropiques* that we should change the name of the field of Anthropology to 'Entropology,' as "the study of the highest manifestations of this process of disintegration" (p. 414). Lévis-Strauss (1955) acutely felt the transient nature of the cultural phenomena he was meant to observe as an Anthropologist. "The institutions, morals and customs that I shall have spent my life noting down and trying to understand are the transient efflorescence of a creation in relation to which they have no meaning, except perhaps that of allowing mankind to play its part in creation," he writes (p. 414). The poets Collins and Scott take Lévis-Strauss' *pensée* seriously and 'play a part in its creation' by committing acts of "creative destruction". They write: "That there are no messages, no poetry after decomposition, but a minute ecological process in which we have no part but intrusion, or at best no part but the donation of raw material for becoming dirt. Small anti-entropic pockets called

'evolution' amid the general irresistible lean of entropy" (Collins & Scott, 2013, p. 92). In response, Collins and Scott (2013) "compose in the long wake of decomposition" (p. 67).

Figure 3. The "general irresistible lean of entropy" at work in a forest in British Columbia.
© Stephen Collis and Jordan Scott, Courtesy of Coach House Books.

METAPHOR

The *Decomp* project also allows us to reflect on the organic structure of language. The dominant metaphors that describe language come from the biological world, and from Darwin's theory of evolution in particular (Lewontin, 1970). Languages can be said to evolve, mutate, grow, stagnate and even die. Languages like the Cayman Island dialect can be described as 'fossilized,' and will eventually go 'extinct' or 'die'. This metaphorical mapping emerged after the publication of Darwin's *Origin of Species* in 1859 and eventually gave rise to the field of evolutionary linguistics. Science historian Richard Boyd (1979) calls this a "theory constitutive metaphor" (p. 361), one upon which the entire field relies to make sense of observed phenomena. The structure and the entailments of the metaphor have largely determined the direction of the research. "The hypothetical, or exploratory, role of metaphor is central to theory development and supports the view that it can provide a way to introduce terminology for features of the world whose existence seems probable but many of whose fundamental properties have yet to be discovered," he writes (Boyd, 1979, p. 357).

Darwin (1871/2004) himself mused about the similarities between natural selection in the biological world and the change of languages over time in *Descent of Man* writing

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https://doi.org/10.48417/technolang.2021.01.03

that "The formation of different languages and of distinct species, and the proofs that both have been developed through a gradual process, are curiously parallel" (p. 59).

Some philosophers of science have suggested that scientific theories are, by necessity, analogical in form, in order to create a simplified and understandable model of nature (Hesse, 1966). In the 19th century, linguists engaged in philology, the comparative analysis of languages, in order to try and find similarities. Darwin's theory gave linguists more tools with which to think about language change over time, as having shared ancestors, for example, or as evolving faster or slower due to differential environmental pressures. Good metaphors that allow scientists to make progress in their fields will tend to endure, whereas metaphors that are not 'good to think with' will fade away. Successful metaphors also succumb to entropy, but instead of fading away from use they lose their 'metaphoricity'. Over time, novel metaphors lose their novelty and become 'conventional metaphors', those expressions that pepper our speech without reflection. 'Dead metaphors' (to use a metaphor to describe a metaphor) are metaphors that are considered by standard speakers to be synonyms of the literal meaning, although with some prompting, they can see the metaphor underlying the term (i.e. "it was a very deep blue" or "they used a crane to move the bricks" (Deignan, 2008, p. 39). Sometimes dead metaphors are only traceable through etymology and, as such, can be called 'historical metaphors'. The word 'evolution' is such a metaphor. It traces its roots to the Latin *evolvere* which meant "to unroll" or "to roll out," especially of scrolls of parchment (Harper, n.d.). When it was first used in the 17th century, it was a novel way to describe the progression of something from a simpler form to a more complex form, usually applied to embryos as they grew. By the time Darwin used the term (which appeared only once in the first edition of *Origin of Species,* poetically, as the last word in the text) it has lost the metaphorical connotation. Today, most linguistic theorists would agree that the meaning has 'shifted' and the metaphorical meaning has become the dominant, literal meaning, as has the vocabulary that, once applied to biological evolution, now applies to language. For most linguists, languages *literally* evolve and the process can be considered a parallel example to that of biological evolution of a fundamental phenomenon.

Figure 4. The metaphorical mapping between biological and linguistic systems made literal.

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The mapping that occurs between biology and language can be summarized as follows, using Aristotle's original notation when describing analogy:

$$\frac{gene}{species} :: \frac{word}{language}$$

When linguists first explored this metaphor, genes had not yet been discovered, yet they were predicted by Darwin as a basic unit of hereditability between generations. As scientists discovered the mechanism by which inherited traits were passed from one generation to the next (genes) and their internal structure (nucleotide base pairs), the analogy became tighter and suggested directions for experimentation.

$$\frac{nucleotide}{gene} :: \frac{phoneme}{word}$$

Yet even the solidity of the words *gene* and *species,* taken from what is known in metaphor studies as the "source domain" (as opposed to the "target domain" of language, the domain in need of the metaphor), crumbles under scrutiny. In explaining how analogy works, Aristotle uses these very words with a very different mapping: "Metaphor consists in giving the thing a name that belongs to something else; the transference being either from genus to species, or from species to genus, or from species to species, on the grounds of analogy," he writes in *Poetics* (as quoted in Garett, 2007).

In 1956, a multi-disciplinary team of biologists, linguists and psychologists explained that they "turned to linguistics where… fundamental units organized into a system have been firmly established and examined phonological and phonetic theory and empirical data on phonetic evolution, searching for similarities with the process demonstrated in Mendelian genetics" (Gerard et al., 1956, p. 6). The authors propose an experimental design where phonemes are examined for random change as nucleotides are subject to random mutation. "An evolutionary perspective seems prerequisite to mutual involvement of linguistics and biology; the renewed interest in the origin of language, and the comparative study of animal communication, are part of the general renewal of evolutionary perspective in anthropology" (Hymes, 1963, p. 97).

A paper on statistical methods from 2015 makes this comparison explicit: "phonemes are the units of sound that make up words and distinguish one word from another, just as the four nucleotide bases (A, C, T, G) make up DNA gene sequences or the 20 amino acids make up protein sequences" (Hruschka et al. , 2015, p. 1). The authors continue to write that "in a linguistic context, sporadic changes refer to the replacement, over some arbitrary interval of time, of one phoneme in one place by another and are analogous to single nucleotide or amino acid substitutions in gene sequences." (Hruschka et al. , 2015, p. 2)

But there are obvious limitations to such a metaphorical mapping. Under Darwin's formulation, evolution is driven by natural selection which is based on random mutations at a genetic level which then confer an advantage or disadvantage on the individual, and eventually, the species. But languages, as we saw with the Cayman Island dialect,

'evolve' in ways that depends more on socio-economic factors and contingencies of history than they do on random changes in phonemes pronunciation. The fundamental question remains, "What factors shape languages over time? And at what level?" (Greenhill, 2016, p. 31). Scientists are thus tasked with probing the limits of the metaphor to see where the model falls apart. As a descriptive tool, linguists can map the "phylogenetic relationship" between languages and determine families, descendants, ancestors and relatives (Campbell, 2017, p. 1), but the mechanisms that cause language to change cannot be ascribed to random mutations.

Determining the "selective pressures" on languages is a different undertaking for linguists than it is for biologists examining species. The first issue of the *Journal of Language Evolution* from 2016 summarizes the different hypotheses on how, or even whether, linguistic traits are selected for. "If languages do indeed evolve then they must show the three crucial aspects of an evolving system: variation of traits, inheritance of those traits, and the differential survival—that is selection—of those traits," the editors write. Selection, they argue, might operate at the level of the speech act, not the phoneme, or operate to favor shorter words and sentences so speakers can conserve energy. The editors point to effects of group size, notions of prestige and class, the prevalence of loan words, isolation from contact with other speakers as variables that need to be considered under a model of language evolution (Greenhill, 2015).

Figure 5. The effects of "non-quite-human" actants. © Stephen Collis and Jordan Scott, Courtesy of Coach House Books.

ONTOLOGY

As we come back to the forests of BC, we note that the poets have figured out a way to subject Darwin's words to the random vicissitudes of coastal climate. They are probing the limits of Sapir's metaphor that environment can affect language. They blur

the boundary between living things like wasps and humans, and non-living things like books and words. If the metaphor of evolution that is used to examine language has died and become a literal description of how language changes, does it make sense to classify language as a non-living thing? If the pages of the books left in the forest are used to create nests, or are decomposed by worms and mushrooms, are they similarly inanimate?

Political theorist Jane Bennett (2010) calls for an ontological shift away from a neat binary between living and non-living things towards a recognition that so-called inanimate 'things' are complex 'vibrant' materials that contain their own "vital materiality". "I want to highlight what is typically cast in the shadow," she writes: "the material agency or effectivity of nonhuman or not-quite human things" (Bennett, 2010, p. ix). Pine needles, rain, wind, beetles, or the tread on a hiker's boot are all objects that *do* things to the books in *Decomp*; they act upon them, hence Bennett's frequent use of Latour's term, *actants*. The words on the pages reveal themselves to be actants in their own right, more than just metaphorically alive. They are "non-quite-human" in their agency. "In composing and recomposing the sentences of this book--especially in trying to choose the appropriate verbs, I have come to see how radical a project it is to think vital materiality," writes Bennett (2010), "It seems necessary and impossible to rewrite the default grammar of agency, a grammar that assigns activity to people and passivity to things," she concludes (p. 119).

As an extension of this ontological shift, Bennett uses an argument, to come full circle, from the work of the original ontological trickster, Charles Darwin. Based on his observations of earthworms, Darwin described how they made topsoil and vegetable mould, and as a by-product, made the earth habitable for humans. According to Bennett (2010), this frames earthworms as agents who made history, as political beings (p. 95). Worms feature strongly in the pages of *Decomp*, nesting in the cool gaps under the book covers, or chewing through pages and returning the pulp to the forest ecosystem from whence it came. Collins and Scott (2013) remind us that, "soil is a verb" (p. 120), and not only when it works to make something dirty, but when it acts on objects to imbue them with organic matter. This includes the poets themselves. A new "soil ontology" is required "requiring that humans be included more decisively in the concept of soil, that is, as members of the soil community rather than as mere consumers or service beneficiaries" (Puig de la Bellacasa, 2015, p. 13).

DEATH

Lévis-Strauss' existential melancholy in the face of unstoppable entropy can be framed here, dealing as we are with decomposition and humus, as a reaction to death. Just as species can go extinct if they are not deemed to be the "fittest" for an ecosystem, so can languages experience "language death." Language death is the endpoint of a process which sees a minority language getting squeezed out by a dominant language (Dressler, 1996, p. 95). Linguist Nancy C. Dorian (1981) gives an example of a dialect of Gaelic spoken on the Northern tip of Scotland that is almost gone entirely. Swamped as they are by the English spoken in Great Britain, these previously isolated communities, each of which spoke separate a distinct dialect on different sides of a mountain range, are at danger of having their differences flattened, crushed by the inevitable roll of entropy towards uniformity.

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English, the language in which Darwin wrote, is not in danger of becoming extinct. Latin, the other language that appears often in the pages of Origin of Species, is dead, but did not experience "language death" in the same way that East Sunderland Gaelic was lost to its speakers. Instead, Latin was able to reproduce, spawning daughter languages that took over much of Europe (Dressler, 1996, p. 195). It might not be around anymore, but Latin's genetic material has survived, heard in the phonemes of Italian and Spanish.

Figure 6. "Words are things we do together."
© Stephen Collis and Jordan Scott, Courtesy of Coach House Books.

RECOMPOSITION

For Collins and Scott (2013), "words are things we do together" (p. 123). Their experiment in the woods with five sacerdotal texts from the high priest of evolution was a cheeky move to remind us of the social communion we share when we use words together. Their experiment would have little meaning if it was not documented in written (and photographic) form. In keeping with the theme of irreverence, Scott writes that "the pine is mightier than the word" (Collins & Scott, 2013, p. 132). Sapir would be pleased to know that each of these nouns differ from their idiomatic archetypes in a patterned manner. From 'pen' to 'pine' we have a change of two letters but only one phoneme (/e/ > /aɪ/); but for sword to word we only have one letter removed but experience an auditory shift of two phonemes (/s/ > ∅ in word-initial position, and /ɔ/ > /ɜː/). There is only one nucleotide in difference between these two pairs of genes.

The poets piece together the fragments of Darwin's prose in one final act of resistance against the entropy that threatens to unwind us all. Assembling phonemes into words and words into sentences are acts of assembly we all perform every day, together, battered by wind and rain.

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