

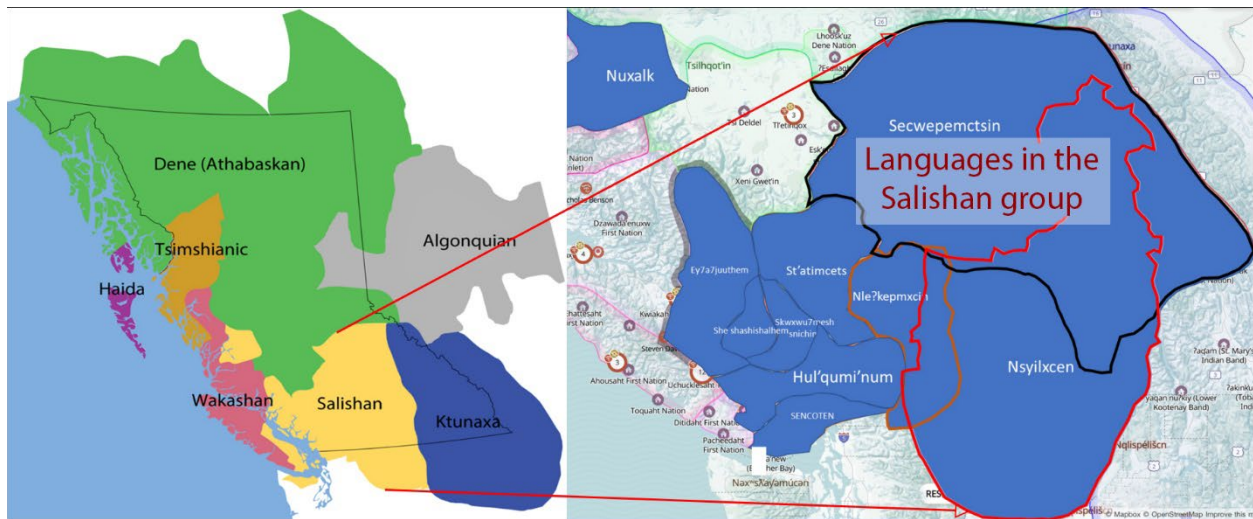
Indigenous Linguistic Diversity in British Columbia

THE MOTHER TONGUE

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GGGATATTGCTGGGGACCCTGTTTCTATGGCAACTTGCTCCTCTGAAATTTTGTTC

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Anthropology 341
Professor Levell
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British Columbia is home to 34 Indigenous languages.¹ These Indigenous languages comprise a startling 60 percent of Canada's total number of Indigenous languages.² What is the reason for this hotspot of linguistic diversity?



The seven language families of British Columbia along with a more detailed map showing the languages in the Salishan group.
Photo source: modified from <https://learning.royalbcmuseum.bc.ca/firstnationsmap2/>

This paper reviews several current hypotheses for linguistic diversity, but will also argue that the question of “why” is less interesting than the question of “so what?” What is the significance of linguistic diversity? What are the possible consequences of linguistic diversity?

If we are to suggest that linguistic diversity is important to culture, that it is not just a random phenomenon, we should put the present discussion into its proper context of cultural evolution.

UNESCO lists *oral traditions and expressions* as one of five domains of intangible cultural heritage (ICH), but arguably this underestimates the importance of language to culture.

Language is a universal component of all cultures, and ties all of the other ICH domains

together. Indigenous language will be central to the process of decolonizing museums and the surrounding culture that museums curate.³



This static image from the UNESCO website is interactive online, allowing the viewer to hover over elements and click on circles and pathways. However, even this snapshot of UNESCO's "constellation" illustration of ICH elements demonstrates the central role of language; language would be a necessary component of almost all of these elements spread across all five domains of UNESCO's ICH categories.

illo tempore⁴

The origins of human culture can be traced back at least 150 million years to the development of eusociality in termites. Two-time Pulitzer Prize winner E.O. Wilson was the most important voice in the emerging concept of eusociality. Eusociality refers to the highly specialized organization of some social species wherein different individuals within that social group perform different tasks. Since a key element of eusociality is its partitioning of labour into specialized tasks, language is a prerequisite to enable the horizontal transmission of new knowledge to other guild members and other “castes.”⁵ Honey bees, to name only the most well-known example, have a sophisticated language of signs (waggle dance) that they use to communicate information about important locations.⁶

It is worth digressing at this point to emphasize that language in animals is largely learned, unlike instinctual animal behaviour. Birds, raised in isolation - without parenting (or other substitute socialization process) - can reproducibly build complex nests in standardized shapes using stereotyped materials, truly an amazing example of intangible heritage practice. And all of that complex behaviour is encoded into base pair sequences in strands of DNA!

Language, on the other hand, is very different. Chickadees, raised in isolation, have impaired capacities to communicate with other chickadees and to learn.⁷ Chickadee troupe formation requires communication and so is a critical adaptation to winter survival. So why would language not be transmitted as an instinct, as a fixed behaviour like nest building? The presumption here is that learned language benefits (or has “fitness” in evolutionary terms) by being almost instantly adaptable. Language, as a behaviour, is valuable precisely because it can

be quickly adapted to changes over time and space. As a learned behaviour, chickadee language can respond far more quickly to change than an instinctual behaviour could.

The evolutionary advantages of rapid knowledge exchange are uncontroversial. But it should be noted that language serves another, opposing advantage. Language can serve to stabilize culture against change. Language integrates all of the UNESCO ICH domains; it is the brick and mortar of culture.⁸ One sees an important example of how language defends the status quo in human intergenerational conflict. A younger generation might use idiosyncratic language variations to forge a unique identity with their peer group. The older generation, defending the extant culture, will rail against these variations, attempting to stabilize culture.⁹ So, language is useful in two directions! It has the potential to change rapidly *and* stabilize culture.

The conjectured associations with high density linguistic diversity are presented in appendix one. I turn now to specifically discuss the role of abundant resources. Abundant natural resources enable smaller communities to obtain and defend autonomy from the influences of neighbouring societies. There is a diminished need for *necessary* trade (for subsistence purposes) or for travel required to obtain subsistence needs, reducing outgroup contact and cultural contamination. Material wealth decreases the necessity of war; or at least it presents a condition where the economic and social costs of war exceed the possible benefits, thus stabilizing territorial boundaries. Material abundance decreases the time spent performing mandatory tasks and increases “leisure” time. For Indigenous cultures along the Pacific

northwest coast, this meant long winter months around a central fire in the longhouse, practicing language and story-telling, engaging in ceremony and craft production.



Walter J Phillips. *Karlukwees*. 1929 colour woodcut.

Because of the long habitation of the northwest coast (see appendix one, item three), as well as the relative stability of autonomous smaller (see appendix one, item nine) societies with a strong oral tradition, Indigenous communities in British Columbia would have had millennia to evolve distinct languages.

Like my grandfather when he carved argillite, he used to tell us stories. He'd tell us the story of what he's carving about, and my mother used to write them down for him. I remember he was carving a story about bears that were also human, and the husband was killed. He was telling us the woman was crying; one of the bears he had carved had tears down his cheek too. Now it seems that carvers just carve, without telling a story, yet that's what carving is about.

K'inwas (Winnifred Casey) recalls her childhood in Jusquan Bedard and Jisgang Nika Collison. 2011, 144.

Now, there may not be empirical evidence to support the role of abundant resources as an agent in the evolution of linguistic diversity,¹⁰ but there is evidential support in ethology. The Pacific Northwest is a well-documented realm of three different ecotypes of a single species, *Orcinus orca* (orca or killer whales). "Resident" killer whales eat only salmon, "transient" killer whales eat only marine mammals, and "off shore" killer whales eat only sharks. This separation of a species into ecotypes is not only rare, but striking in its bizarre implementation. Pods of different ecotypes pass each other regularly in the channels of the Inside Passage and do *not* interact. Pods of the same ecotype, on the other hand, will regularly aggregate into superpods for the purposes of learning and reproduction. All three ecotypes speak different languages (which are easily recognized by their prey), and within each ecotype, there are distinct dialects which researchers can recognize. So killer whales have complex societies and complex language.

There is one other very unusual thing about orca: they have grandmothers. There is currently only a handful of species where females are known to live well beyond their reproductive years: elephants, toothed whales, and some primates including humans. Nattress has recently examined the “grandmother hypothesis” in orca and demonstrated that the matriarchal societies of killer whales obtain an evolutionary advantage because grandmothers enhance the survival of grandchildren. Although language was not an investigated variable in the Nattress study, it is plausible that grandmothers also serve a purpose in language stability: that matriarchal societies with grandmothers have enhanced trans-generational standardization of learned language with all its nuances of lexicon, intonation, and meaning. The various investigations into the heritage of orca grandmothers have not explored the association with cultural or language diversity in orca, but one would speculate that it could be due to resource abundance. There are abundant resources for orca in the Pacific northwest; plenty of salmon, plenty of marine mammals and plenty of shark (used to be, anyway). Orca divide the same ecological niche by using the fence of culture. This enables more of the species to thrive *in the same location* without potentially injurious competition.

The argument here is not that ethology proves the cause of human language diversity in British Columbia, but it certainly provides a compelling and local example of how richness of resources can engender linguistic and cultural heterogeneity.

conclusion

It has been argued that silos of academic investigation impair the overall advance of knowledge, especially as the super-specialization of knowledge leads to ever narrower lines of inquiry. This paper has focused on the correlation of resource abundance with the presence of high-density linguistic diversity in British Columbia, but resource abundance is just one of many conjectured and plausible explanations. Gavin (2013) has argued that the ultimate explanation for this phenomenon will be complex:

Undoubtedly, multiple factors shape the geographical patterns of diversity. Therefore, research must move beyond single-factor correlative studies, and multicausal approaches should be pursued through multivariate statistical methods.

And Richerson (2013) has sounded a related note of alarm:

The professionalization of the sciences and humanities around the turn of the twentieth century resulted in many more specialized scholars who became organized into disciplines that tended to behave in a quasi-tribal fashion. Even within the social sciences, disciplinary balkanization is a problem.

In the end, explaining complex cultural phenomena will require the collaboration of linguistics, linguistic anthropology, statistics, computer modeling, ethology, cultural anthropology, and Indigenous knowledge¹¹ to name but a few of the involved disciplines! It should be stressed all of the variables listed in appendix one are *correlations* only. We know almost nothing about the *causes* of linguistic diversity. Maybe further advances in academic cooperation will shed more light on our understanding. Let us hope so. If we want to know ourselves, as individuals and as group members, we will benefit from understanding the way that language is shaped.



“Heritage ... originates in the deeply rooted human need to give meaning to temporary chaos, to secure group boundaries, and to provide a symbolic sense of continuity and certainty that is often lacking in everyday life.”¹² Photo source: Steve Rasmussen.

so what?

Before ending all of this unresolved inquiry, an even greater uncertainty must be at least mentioned; namely, what is the relationship between language and cognition? It is commonplace nowadays to refer to Indigenous “ways of knowing,”¹³ and language is often given as an example of a cultural attribute that shapes knowledge. It is far beyond the scope of this essay to review the debate about “linguistic relativity,” pitting as it does the believers (the Sapir-Whorf hypothesis) against the deniers (Noam Chomsky and others). The debate is mentioned here only because it presupposes a central role for language in determining “who we are.”

Identity is comprised of two competing priorities: our striving for individual authenticity and our role as social animals.¹⁴ These priorities are often in conflict and thus give rise to behaviours that might be interpreted reflexively as irrational. (For example, we want to be greedy, but we want to belong to groups of generous individuals.)

Language is the medium by which we negotiate this battlefield of eusociality. It is not just a rote instinct that leads us on to automatic lives: short, brutish, and cruel.¹⁵ No. We learn languages from our mothers and grandmothers.¹⁶ And as they teach us to talk and to learn,¹⁷ we develop self-referential consciousness, the defining characteristic of our species.



Orca mother J35 carried her dead calf throughout the Salish Sea for 17 days in 2018. Photo source: Robin Baird/Cascadia Research Collective.

Notes

¹ According to the BC Report on the Status of First Nations, there are 34 languages in 7 language families with 93 different dialects. These languages include 2 language isolates, 3 sleeping languages, and one creole language (Chinuk Wawa). There is ongoing controversy about the way distinct languages are enumerated. Gessner (2018) claims that if the same definitional criteria applied outside of BC were applied inside BC, then BC would lay claim to over 90 languages.

² In addition to linguistic “diversity,” which strictly speaking refers to the *number* of different languages, BC shows a high degree of language disparity (the degree to which languages differ from one another) with two language isolates, and a high degree of phylogenetic diversity (the number of language families). In this paper, to simplify the linguistic vernacular, “linguistic diversity” will be used to refer to all three ways that languages can vary.

³ Amy Lonetree. 2012. *Decolonizing Museums: Representing Native American in National and Tribal Museums*. University of North Carolina Press.

⁴ “Illo tempore” is borrowed from Graeber and Wengrow (*The Dawn of Everything*, 497), the Latin phrase used by Eliade to refer to “the dawn of everything, when animals could talk or turn into humans, sky and earth were not yet separated, and it was possible to create genuinely new things.”

⁵ Ants and bees are the obvious example of eusociality; ants were the particular research interest of E.O. Wilson.

⁶ Greggers, 2005.

“Castes” is terminology used by researchers investigating insect altruism. It carries obvious pejorative meanings in human societies, and so I use the phrase cautiously in this paper. It conveys, however, the meaning of specialized guilds in insect societies, sub-groups who make considerable individual sacrifice (altruistic sacrifice) for the fitness of the colony “super-organism.”

⁷ Shackleton, 1993.

It should be noted that it would not be possible for nestlings to have observed nest building behaviour. Since there is no way a parent bird could model nest building behaviour, evolution would have to encode that behaviour as an instinct. However, beavers can build their highly complex engineering structures without modeling, so the behaviour is clearly encoded in DNA. Since beavers could observe other beavers building dams, it is possible that evolution could have “elected” to transmit dam building behaviour as a learned activity, but it did not. (“Elected” in quotes apologizes for the erroneous but useful implication of teleology in evolution.)

⁸ Recognizing the central role that language plays in culture, 2019 was designated by UNESCO as the International Year of Indigenous Languages.

⁹ The “official” (dictionary) version of any given language is an example of “authorized historical discourse” as discussed by Harrison, 2009 and Smith 2016:

“Rather than conceptualizing heritage as sites, places, or the artifacts that museums collect, we can define it as a discourse, one that frames a range of cultural practices that utilize the past to negotiate the legitimacy of the cultural values of the present.”

¹⁰ There actually *is* some evidence, especially with the use of new and sophisticated computer modeling studies. (Pacheco Coelho, 2019)

¹¹ The importance of Indigenous knowledge to culture was amply demonstrated in the Royal British Columbia Museum exhibit *“Our Living Languages”* which won the prestigious 27th Annual American Alliance of Museums award for Excellence in Exhibition.

¹² Hoelscher 2006, 216.

¹³ Jill Baird and Damara Jacobs-Morris. “The Voices of the Canoe Project: Weaving Together Indigenous and Western Historical Knowledge Traditions.” In *Museums and the Past*, 39.

“Creating a virtual space where two distinct forms of historical understanding (one informed by an Indigenous epistemology and the other inspired by its Western counterpart) can live together, conflict with, and complement each other has been a challenging process.”

¹⁴ Charles Taylor. *The Malaise of Modernity: The 1991 CBC Massey Lectures*.

¹⁵ Thomas Hobbes. 1651. *Leviathan*. Government (political philosophy) was created to protect people from their own selfishness. Hobbes coined the phrase “the voice of the people” to refer to the capacity for selected representatives to express the will of the group.

¹⁶ Misogyny is the original sin of Western culture, the first instance where different sub-groups within human societies were recognized, leading to ingroup/outgroup strategies in a competition for power. I suggest that early human societies intuited what we now know to be true: that mothers have an inordinate influence on culture because of the importance of the early years of infancy on child development. Males, perceiving this asymmetry of cultural authority, constructed various institutions to assert male dominance: religion with male gods and male clergy, educational systems that excluded women, politics that excluded women, and economic systems that valued “male” work and marginalized the labour of mothers, aunties, and grandmothers.

Once the advantage of institutionalized bias was recognized and successfully implemented, it was easily extended to disadvantage not only women, but other outgroups with different skin colors, languages, religions, etc.

¹⁷ *And they teach us to love, but that is another story.*

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from river to river, performing the same ceremony and being entertained. It often took them as long as a month to issue the invitations.

For the arrival of the guests, the g. txa'ta chiefs had duties and positions which were hereditary. The main greeter (in the rear of the house) for tsibasa's feasts was waka's (g. anha'do). When waka's himself gave a feast then ni-sa'it, a g. spawadwa'do prince in the house of tsibasa', would act as greeter. The greeter had to know when, where, and how to seat each guest chief so as to conform to ^{publicly acknowledged} the special privileges which they had ^{assumed} ~~stated~~ and formally proclaimed (se' s'ixt) for their

Excerpt from Wilson Duff fonds, 1976. MOA Archives. Tsimshian Files, Potlatch and Feast, page 44.

APPENDIX ONE – CAUSES OF LINGUISTIC DIVERSITY

the problem is widely recognized ...

"Languages occupy a central role in studies of human cultural diversity, whether viewed through the prism of social, cultural, historical, or psychological variability. With something between 6000 and 7000 distinct languages spoken today, they offer a kaleidoscope of largely independent natural experiments in evolving complex cultural systems without formal planning." (Evans, 2013)

"Understanding the key factors shaping geographic patterns in language diversity is a crucial task, given the value of language diversity. For example, studies of language diversity can help build our understanding of human history, cultural evolution, and the complexity of human cognition." (Gavin, 2013).

"The differing levels of diversity remain one of the great unanswered puzzles of linguistics." (Evans, 2013, 248)

"A central question posed by this variety of languages is how this diversity arose." (Dediu, 2013, 304)

"The island of New Guinea covers less than 0.5% of the Earth's land area yet supports over 900 languages, whereas Russia has only 105 languages despite being 20 times larger. However, our

knowledge of the drivers and mechanisms behind patterns of linguistic diversity is limited, despite the fundamental importance of the question for our understanding of human cultural evolution.” (Gavin, 2013)

“We might assume that the mechanisms driving language diversification also vary from one location to another, but the methods used to date cannot capture this potential non-stationarity.” (Pacheco Coelho, 2019)

“Potential factors and explanations for language diversity and skewed patterns of language cladogenesis are strongly under-investigated. It is unclear why there has been reluctance in linguistics to investigate such pressing questions further.” ((Dediu, 2013, 315)

and ...

British Columbia is a unique example of high-density linguistic variation because it is removed from the equator, where most of the hotspots of high linguistic diversity are found. Whatever generalities might be applied to global linguistic diversity, British Columbia clearly poses unique explanatory challenges.

twelve variables postulated to correlate with linguistic diversity

Languages vary in three ways:

1. number of languages within a given area (language diversity).
2. phylogenetic diversity (number of language families – a technical term in cladistics referring to the length of branches in the language taxonomy for an area).
3. linguistic disparity: the *amount* of difference between languages (in linguistics: typological diversity).

However, languages vary in many different ways, and it is currently impossible to “combine these variables into a global measure of linguistic disparity.” (Gray, 2013, 293)

	VARIABLE	COMMENTS
1	non-nomadic, non-migratory cultures with well-defined territorial boundaries	This is a self-evident variable in any discussion about biological, cultural or linguistic diversity. Stationary cultures will tend to be more isolated. Over time, cumulative variations in the language will cause it to diverge from distant language cultures.
2	abundant resources	1 and 2 are related insofar as abundant local resources obviate the need for a nomadic culture. But wealth has other potential impacts on linguistic diversity. Material wealth and leisure time enable the “work” of culture: rituals, storytelling, art. Abundant wealth might also contribute to cultural stability by minimizing war. Cultural communities in long term equilibrium with neighbours would be better able to defend their autonomy and therefore their unique cultural attributes. There is a correlation between linguistic diversity and biological diversity (Stepp, Moore, for example – cited in Gavin). Presumably,

		abundant resources enable both biological and cultural variation; a bigger pie can be divided into more niches.
3	length of habitation/ duration of civilization	Indigenous communities along the Pacific NW coast are some of the oldest known communities in the Americas. Humans first entered these continents along the NW coastline.
4	strong cultural tradition of oral communication and storytelling	Indigenous peoples of the Pacific Northwest currently and historically place a great deal of emphasis on public speaking. There are well-defined rules for the conduct of speakers, and public speaking is an important honorific taken very seriously. This cultural attribute would contribute to “error correction,” which is thought to reduce language change over time. “Error correction” contributes to language stabilization. A somewhat unusual aspect of First Nation cultures in the Pacific northwest is considerable down time during the winter, a feature one would not expect to see nearer to the equator. Abundant resources and bad weather confine communities to longhouses during the long, dark, and rainy winter months. There, gathered around a central fire, cultural features would be robustly reinforced.
5	political complexity	Currie and Mace theorize that complex agricultural societies <i>reduce</i> language diversity. This idea is sometimes called “dense social networks” (for example, Trudgill cited in Gavin).
6	geographical boundaries help maintain isolation	This variable is often the first one suggested to explain linguistic diversity in British Columbia. Undoubtedly, there abundant barriers to human interaction: water and mountains. But this variable does not stand up to a lot of scrutiny because there was abundant trade between First Nations who even developed a jargon (Chinuk Wawa) to facilitate trade. Also, important to note, First Nations along the Pacific NW coast shared many cultural features: for example, rituals like the Hamatsa ceremony and material wealth such as raven rattles. Geographical isolation increases the difficulty of war (costs of war) preserving intact cultural communities. (Chen)
7	cultural impacts on language	This variable alludes to the area of controversy called “linguistic relativity” or the Sapir-Whorf hypothesis. Usually, causality is in the opposite direction: proponents argue that language shapes cognition (and presumably culture as well). But since correlation is the real subject of the controversy, not causality, it could just as easily be argued that cognition/culture shape language.¹ Beyond the debate around linguistic relativity (culture impacting language indirectly through cognition) culture will obviously impact language more directly.

		<i>"Variation is often less a matter of degraded signal than an additional semiotic layer employed for social-signaling purposes, identifying the speaker's regional affiliation, class, caste, religion, and so on." (Evans)</i>
8	resistance to change/affinity for imitation	This is speculative, but some cultures might be more resistant to change, others more open to change. Some biological evidence in Macaque monkeys suggests neural systems that produce the desire to imitate. Such a cognitive attribute would obviously help develop and reinforce culture.
9	unknown influence of village size	Greene has postulated there is a "sweet spot" to the size of cultural communities with regard to linguistic stability – not too big and not too small. Larger communities are more resistant to innovation/change. (Granovetter cited in Gavin) Large organizations often display inertia to change.
10	unknown genetic and epigenetic factors	The co-evolution of biological and cultural attributes has a controversial history, but many researchers now believe that minor biological variations could impact language development. Perhaps even more contentious would be research efforts investigating cognitive variation. Cognitive features show strong genetic influence in twin/twin studies – features like extroversion/introversion, religiosity, moral intuitions, etc. Variation <i>within</i> a community almost certainly exceeds variation <i>between</i> communities. However, it is plausible that minor variations, accumulating over generations, might impact the development of language. (Levinson, Dediu).
11	environmental heterogeneity	This would <i>not</i> be an obvious factor in linguistic diversity along the Pacific coast where the environment is uniformly temperate rain forest, but it might help explain language variation in other biozones in British Columbia (the interior plateau and the Rocky Mountains).
12	multilingualism	This is a bit circular (tautological), but there is an argument that multilingualism increases the odds of multilingualism, that the process is self-reinforcing. The argument has been expressed by Vanessa Diaz. "Minds in Action: Evidence that Linguistic Diversity Helps Children Build a Theory of Mind." <i>Bilingualism: Language and Cognition</i> . 25 (1): 70-80, 2021. Diaz suggests that bilingual children intuitively understand that minds watch themselves, that there is a potential space between language and consciousness. This could possibly provide evolutionary fitness via enhanced levels of empathy.

Conclusion ...

Undoubtedly, multiple factors shape the geographical patterns of diversity. Therefore, research must move beyond single-factor correlative studies, and multicausal approaches should be pursued through multivariate statistical methods." (Gavin, 2013)

"Because correlation does not guarantee direct causation, the mechanisms underlying the correlates of diversity remain poorly understood." (Gavin, 2013)

Notes

¹ This discussion around linguistic relativity raises an obvious question: what causes cultural diversity? This is really what got me thinking about this topic for a term paper, but I thought narrowing my focus to linguistic diversity would be a more manageable topic. Part of the problem here is that we have no way of quantifying diversity. For example, there is no system that allows us to "measure" linguistic disparity (how different two languages are from each other). That's because languages vary along too many different parameters.

Well, the same would obviously be said about culture, only more so. Suppose that we were to compare two cultures along the four parameters of religion, language, cuisine, and technology. Maybe the two cultures would be similar in language and technology, but different in religion and cuisine. Okay, how different? And what weights do you assign to the different parameters you're measuring? And how were those specific parameters chosen?

And perhaps this present inquiry into linguistic diversity has an equivalent absurdity to it. But languages and language families can be fairly well defined, and because they can be traced to protolanguages that connect them to cognate languages, we can more easily make cladistic and quantitative observations about language change.



Front cover illustration:

Steve Rasmussen, imaginary DNA base pair sequence. After Douglas Hofstadter. 1989. Chapter 6, "The Location of Meaning." In *Godel, Escher, Bach*. Figure 41.

Back cover Illustration:

Pieter Bruegel the Elder. *The Tower of Babel*. 1563.